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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXIV. No. 3 NEW YORK AND CHICAGO, JANUARY 19, 1922 { Per Annum, $4.00 { Single Copy, 10 Cents

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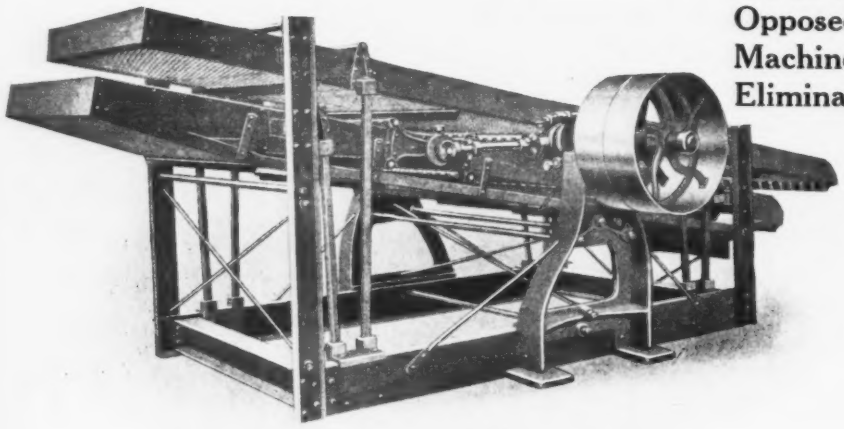

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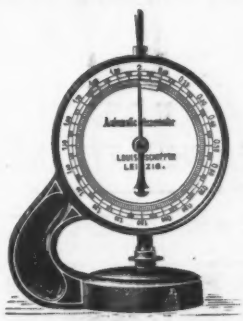

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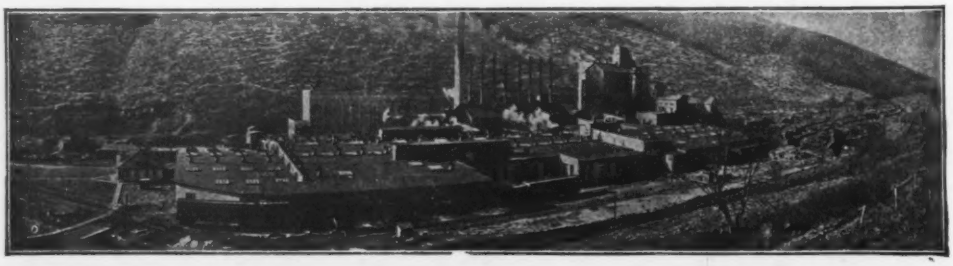

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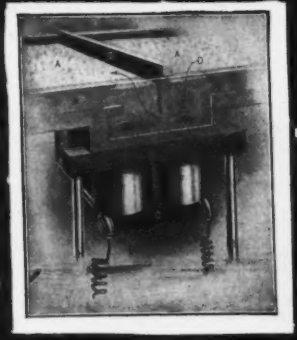

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1

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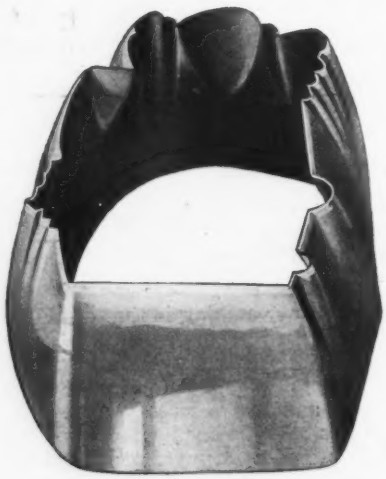

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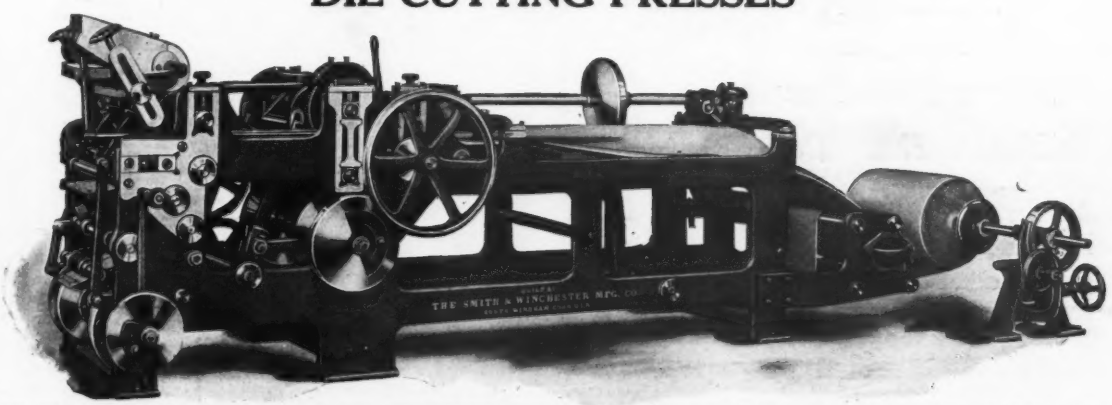
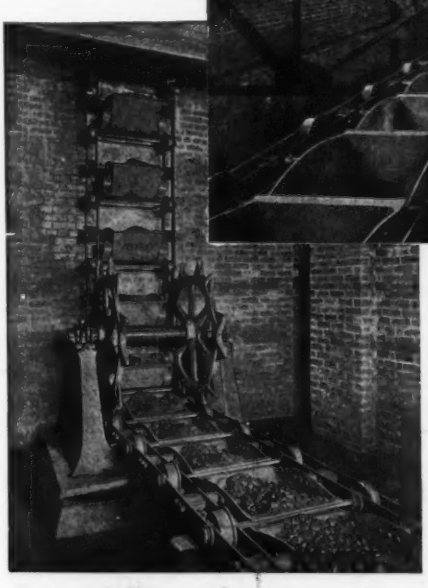


OUR NO. 4 NATIONAL BAG MACHINE FOR THE PRODUCTION OF FLOUR, CEMENT AND LIME SACKS; ALSO CHARCOAL BAGS

Upper Run of Jeffrey handling coal over bunkers.



Lower corner of Jeffrey Carrier with buckets loaded.

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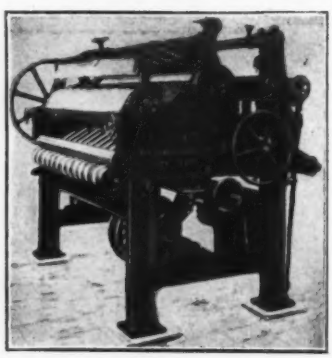

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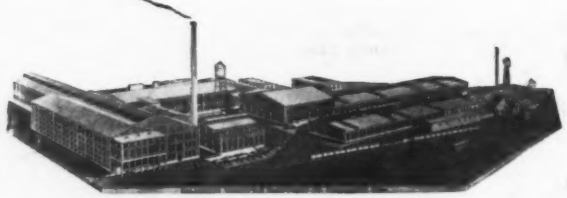

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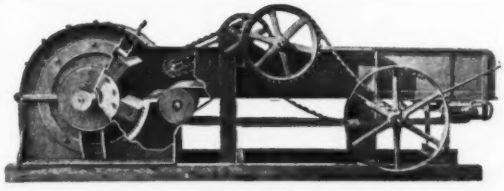

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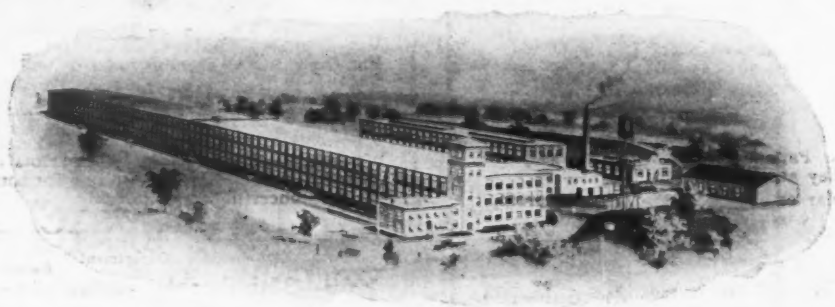

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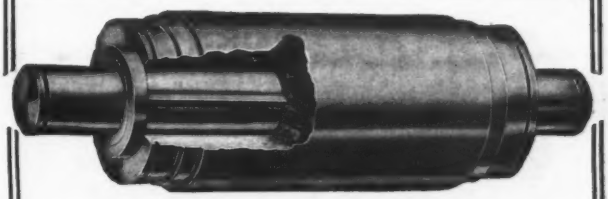

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BECAUSE they deliver dryer, firmer, stronger paper.

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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTIETH YEAR

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INTEREST IN KALAMAZOO IN SUPERINTENDENTS' MEETING

Will Give the City the Chance of Entertaining One of the Largest Gatherings of Paper Mill Men Ever Held in the State of Michigan—Rasmus Hanson, It Is Reported, May Build Pulp Mill at Grayling to Cost $200,000—Paper Stock Valued at About $25,000 Is Burned at the Glendale Division of the Kalamazoo Vegetable Parchment Co.—Kalamazoo Paper Firms Elect Officers.

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., January 16, 1922.—The announcement that the Superintendents' Association of the American Pulp and Paper industry is to hold its annual gathering at Kalamazoo, June 2 and 3, is being received with great interest by the community at large. The fact that the Technical association of the Pulp and Paper industry and the Cost Association of the Paper Industry are likely to join forces with the superintendents for this gathering, adds greatly to the interest in the coming meetings.

It will give Kalamazoo, the leading book paper center of America, the chance to entertain the biggest paper mill gathering ever held in Michigan, a meeting second only in importance to the annual convention of the American Paper and Pulp Association, in New York city.

J. F. O'Connell, president of the superintendents' association, has sent out the official announcement of the proposed gathering of his organization, but can take no further steps in outlining a program until he gets the final decision of the Technical and Cost associations. The question of coming to Kalamazoo is now up to a referendum vote in both organizations, but definite decision is expected within a few weeks at the most.

Should the associations combine here, it will mean fully 1,000 visitors on hand, with a program extending over three days. In addition to the business sessions there will be the usual banquet, always a big affair and in years past held at either the Waldorf-Astoria, New York, or the Congress, Chicago. Then there will have to be special entertainment offered, side trips to mills in the valley and any number of other features.

President O'Connell has already announced that the official headquarters will be at the New Burdick Hotel, but will make no move to secure places for holding the general conferences and business sessions until he gets word from the Cost and Technical associations.

May Build Pulp Mill at Grayling

The rumor is abroad that Michigan is to have a new pulp mill and that it will be erected at Grayling. Rasmus Hanson, famous in the lumber industry and associated in the past with Salling, Hanson Company, R. Hanson's Sons, and Kerry & Hanson, is said to be the man behind the project. For years Grayling was kept alive by Hanson industries, and Mr. Hanson is said to be planning a pulp mill to cost at least $200,000, thus keeping alive the industries in that community. It is stated in this connection that a process will be used whereby jack pine can be successfully converted into pulp.

Kalamazoo Vegetable Parchment Adds New Service

The Kalamazoo Vegetable Parchment Company has added to its widely and favorably known line of products a high-grade onion skin, known as "Standard Onion Skin," which promises to become as popular as "K. V. P." sulphite bond.

"Standard Onion Skin" is being sold by C. A. Hubbard, formerly distributor and salesman for the Bryant Paper Company. Mr. Hubbard is doing a large and steadily increasing business. He is opening 1922 with an intensive and well directed advertising campaign, calling special attention to his new product, also to the very approved methods employed in packing and shipping, whereby the question of waste is practically eliminated and buyers are assured of a 500 sheet ream package in perfect condition.

"The introduction of 'Standard Onion Skin' was a mutual experiment," said Mr. Hubbard. "It has worked out to the satisfaction of the Kalamazoo Vegetable Parchment Company and myself. If we are to judge by the way re-orders are coming, our trade is equally well pleased. I am confident there is a big business ahead, if we take the initiative and go after it."

Watervliet Paper Co. Improvements

The Kalamazoo Blow Pipe and Sheet Metal Company has just completed the installation of an improved drying system in the coated paper division of the Watervleit Paper Company, Watervleit. Old steam pipes have been removed and air is now drawn through hot air coils and then through galvanized iron duct system onto the top of the paper. It is in turn exhausted through the floor by additional ducts and a fan. Not only does the new system permit of a substantial increase in production but the temperature in the drying room is lowered from 120 degrees to 75 degrees, thus greatly improving working conditions.

Paper Stock Valued at $25,000 Burned

Paper stock, valued at about $25,000, were consumed in a fire at the Glendale division of the Kalamazoo Vegetable Parchment Company, Tuesday afternoon of last week. Much of the stock was waste from the parchment plant and had been moved to the Glendale division for reclamation under a system successfully used by this concern. Owing to lack of warehouse room, it was stored in the yard.

Kalamazoo Paper Concerns Elect Officers

Annual meetings are now regular order of business in the Kalamazoo valley district. At the Kalamazoo Paper Company, the Western Board and Paper Company, and the Kalamazoo Stationery Company the following officers and directors were re-elected for the ensuing year:

Kalamazoo Paper Company: President, F. M. Hodge; vice-president, D. F. Altland, Detroit; secretary-treasurer, A. E. Curtenius. Directors, the above and E. C. Parsons, Woodbury Ransom, C. S. Campbell, A. B. Connable, D. R. Curtenius, C. H. Kleinstuck, W. S. Dewing.

Kalamazoo Stationery Company: President, Clare H. Stearns; vice-president, K. R. Cobine; secretary-treasurer, B. Hopper. Directors, the above and E. S. Rankin and S. B. Monroe.

Western Board and Paper Company: President, A. E. Curtenius; vice-president, W. H. Scott; treasurer, P. C. Servaas; secretary, Winship A. Hodge. Directors, A. E. Curtenius, W. H. Scott, P. C. Servaas, Michael Redmond and F. M. Hodge.

Bagley & Sewell Co. On Short Time

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., January 16, 1922.—The Bagley & Sewell Company, manufacturer of paper making machinery in this city for many years and always considered one of the most substantial and consistent industries of the city, this week has cut down activities to three days a week. Just how long this condition will obtain is uncertain, but officials of the company express a hope that a return to normal may not long be delayed.

The reason given for the drastic action is the cancellation of orders, particularly some machine orders placed by the International Paper Company. The local concern has just completed the manufacture of three machines for the International Paper Company for the Three Rivers mill, but it is said that the strike in the mills of the company has caused a cancellation of other orders.

President Stuart D. Lansing is now in Europe and will not return for several weeks. When he left, the orders booked were considered sufficient to keep the plant in full operation for about two years. Recent developments have altered the situation and resulted in the curtailment of production.

Paper Service Co. Wins Verdict

The action brought by the Industrial Paper Company against the Paper Service Company, manufacturers of toilet paper, at Hinsdale, N. H., for the recovery of $25,000 damages claimed to have been sustained by reason of the cancellation by the defendant of the plaintiff's written contract of employment, was tried before Judge Gavegan of the Supreme Court, New York County, and after a trial lasting four days, verdict was rendered in favor of the defendant, the employer, on January 13. Jacob M. Rubinstein, New York City sales' agent for the Grand Lake County, is treasurer and in active charge of the business of the Industrial Paper Company.

The contract made in 1917 between the parties appointed the Industrial Paper Company as sales agent for the defendant's products in the Eastern States, and in the early part of 1919, the defendant cancelled the contract, claiming that its cancellation was justified by reason of the failure of the Industrial, the agent, to perform the contract, and the terms, conditions and obligations of its employment thereunder, in the following particulars:

First, that it sold the merchandise of the defendant at less than prices fixed by the defendant.

Second, that it failed and refused to furnish the mill with accurate and detailed statements of the moneys collected by it, covering merchandise sold and delivered for the account of the mill.

Third, the agent failed to render true statements of the inventory of goods on hand remaining unsold.

Fourth, that it failed and refused to pay over to the defendant moneys collected by it on behalf of the defendant and in a fiduciary capacity.

Fifth, that the agent converted and stole this money received on behalf of the defendant.

The case was tried first before Justice Wagner in the Supreme Court, and after a trial lasting a week, the jury failed to agree, and this second trial, in which the defendant was successful, establishes for the first time the obligations existing on the part of sales agencies toward the principals; the vindication by the jury of the defendant's action in discharging the agent, establishes the right of an employer, a mill, to discharge its agent when the latter fails and refuses to sell goods at the prescribed prices, or fails to keep the principal properly informed and advised as to the status of the business; or, furthermore, if the agent fails to immediately turn over, after collection, funds received. This is the first decision passing upon the obligations and relations of an agent to its employer in the paper business.

The Industrial Paper Company, the plaintiff, was represented by Louis B. Boudin, and the defendant, the Paper Service Company, Inc., of which W. F. Robertson, of Robertson Brothers, is the treasurer, was represented by Joseph G. Cohen of 120 Broadway, New York City.

Paper Makers to Aid Government Fight Profiteers

The paper manufacturers of the United States, spurred to action by the realization that they are being unjustly blamed for the high retail prices charged for their products, have through the American Paper and Pulp Association offered assistance to Attorney General Daugherty in his campaign against profiteering retailers. Dr. Hugh P. Baker, executive secretary, in a letter to the Department of Justice, said in part:

"Information has come to us from time to time during the past year regarding the difference in prices of paper as sold by the manufacturer, and by the retailer. At a recent meeting of manufacturers of tissue paper one of the manufacturers told of going into a store in the town where he manufactures tissue paper, and finding that rolls of tissue paper were being sold at a price indicating several hundred per cent profit on the part of the retailer.

"The Salesmen's Association of the Paper Industry in a recent bulletin gave definite figures showing that while the cost of print paper of various kinds has been reduced very materially, the high cost of printing has been maintained to a point where printing is being curtailed because of high cost, reducing, of course, the use of paper. It was reported to us recently that Sears, Roebuck & Co. had canceled the issuing of new catalogs, and the reason given was the high cost of printing.

"There has been a marked liquidation in prices of all grades of paper, as far as the manufacturer is concerned. If the consumer were receiving the full benefit of this reduction, there would be an increase in the use of paper and of labor as well."

St. Regis Paper Co. Meets

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., January 16, 1922.—Ralph B. Maltby, secretary and treasurer of the Hanna Paper Corporation, which was recently taken over by the St. Regis Paper Company interests, was Tuesday elected a vice-president of the St. Regis Paper Company, thus becoming officially identified with the joint interests. It was the annual meeting of the company stockholders and directors.

The stockholders returned all the former directors to office and they re-elected all the former officers, adding the office filled by the election of Mr. Maltby.

The officers of the company are: Floyd L. Carlisle, president; Alvah Miller, D. M. Anderson, John J. Warren and R. B. Maltby, vice-president; Frank A. Empsall, treasurer; Celestin C. Burns, general manager; Carl B. Martin, secretary and assistant treasurer.

The board of directors re-elected consists of: F. L. Carlisle, D. M. Anderson, F. A. Empsall, C. C. Burns and J. J. Warren of this city, Alvah Miller, Jonathan Buckley, Adolph Mollenhauer and William K. Dick of New York.

It was announced that no other business of importance outside of routine was transacted. The annual meeting of the stockholders and directors of the Hanna Paper Corporation will be held later.

News Print Paper Production in December

The 44 reporting companies in the United States and Canada reporting to the News Print Service Bureau produced 167,839 tons and shipped 167,430 tons during December. Production exceeded shipments by 409 tons. Production figures include 1,605 tons of hanging, of which 182 tons were produced in Canada.

The average daily production of news print paper by the mills reporting for December amounted to 82.1 per cent of the average daily output during the three months of greatest production in 1920, allowing for new machines recently started.

Production during December was 7,984 tons or 5 per cent more than in November and shipments 9,024 tons or 4 per cent more than in November.

Production by the United States mills during the entire year 1921 was 284,779 tons or 24 per cent less than during same period in 1920. Production by the Canadian mills during this period was 70,355 tons or 8 per cent less than in the year 1920. Total production of the 44 reporting companies during the year 1921 shows a decrease of 355,134 tons or 17 per cent when compared with the year 1920.

Total stocks at all reporting mills on December 31 amounted to 32,771 tons or 727 tons more than on November 30, and were equivalent to about 4 days' maximum production.

W. G. Cleveland Goes With E. C. Palmer & Co.

NEW ORLEANS, La., January 16, 1922.—Walter G. Cleveland has been elected vice-president of E. C. Palmer & Co., Ltd., general paper merchants, assuming his new position January 2. Mr. Cleveland was for a long number of years president of the New Orleans branch of the Graham Paper Company.

DEMAND IN PHILADELPHIA CONTINUES RATHER QUIET

An Encouraging Feature in the Fine Paper Division of the Market Is the More Frequent Though Small Demands from Printers—Spring It Is Expected Will See a Considerable Removal for Fine Papers and Prices in Consequence May Show Some Tendency to Advance—All Grades of Paper Stock Are Extremely Quiet—Considerable Interest Manifested in "Long List."

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, January 16, 1922.—There is very little activity in any branch of mill, jobbing, or stock paper trade, but this is attributed to the fact that business houses are engaged in inventory taking, and the re-action that follows holiday trading. An encouraging feature in the fine paper division is the more frequent, though small, demands from the printing industry. These inquiries heretofore have turned out to be orders only when concessions were made. Now the tendency is toward buying at the market and not dickering over prices. Judging from the demand for immediate delivery, the jobbing houses have concluded that the printers are low in stocks on hand, and though there is no volume of buying, it is predicted that should the spring see a revival in business, there may be so great a demand that prices will have a tendency to advance. Coarse papers, too, are quiet, a re-action from the heavy buying of pre-holiday orders. Not much activity is expected before the January inventory is completed. Wrappings show a steadying in prices. Book papers are somewhat lower. A slight reduction is reported on roofings due to the naturally dull season of the winter months. While these prices are slightly off at the present time, the spring demands, with the activity in the building trade, will see a return to stiffening prices. All grades of paper stock are quiet. The whole list shows a waiting attitude for the resumption of mill activity. Prices on the beter grades are holding, for not much of this stock is coming into the market and there is no accumulation. The cheaper grades are low in price, so low in fact that dealers feel that it hardly pays to handle them.

Interest in "Long List"

While the trade is waiting for business to open up, it is concerning itself with the important issue of the moment in the local annals of paper trade, that is—What are the printers going to do about the "long list?" With the quiet season on hand, ample opportunity is given of testing the importance that the "long list" is to play in the demand of the future. The majority of salesmen are meeting with difficulties when first approaching the printers for sales. They are requested to produce the "long list," and on the part of some of the larger printing houses, there is a disposition to be antagonistic when the "long list" is not forthcoming. Salesmen have been informed to let the printers know that the paper trade is not deviating from its former policy and is firm in its determination to do business with the printers on the same price basis and standards as it has maintained previous to the agitation over the "long list." A few printers it is said will inform the trade that they have been requested to demand the "long list." Upon being informed that there is no "long list," they are satisfied with having fulfilled the request and orders are placed. No further action has been taken by the printing organization on the question, and the final outcome of the discussion is awaited with keenness by both the printing and paper trades.

Annual Banquet of Paper Stock Men

The prevailing quietness is giving the stock dealers an opportunity to think over the prospects and plans for the annual banquet and the election of officers, which is to take place at the January meeting of the Philadelphia Paper Stock Dealers' Association to be held the latter part of January. President Evan G. Badger, of the Association, will call a meeting for the dual purpose of electing officers and appointing a committee to arrange for the annual spring social gathering to be held early in March, and for the purpose of setting a definite date.

Large Importation of News Print

A large importation of machine, super calendar and sheet news is booked to arrive at the port of Philadelphia for the Paper House of Pennsylvania, 28 No. 6th street. The importation includes 800 tons and is booked to arrive on January 15, carried by the steamship "Panola," which is transporting the stock from Finland. This is a portion of the great quantities of foreign papers which Norbert Considine purchased during his recent trip to Europe. Concentrated effort will be made to move the stock direct from the dock with prices so attractive that it will facilitate sales at a speedy rate. This is one of the largest importations into this port and many orders for the products have come from up-State Maryland, New York, New Jersey and it is attracting other than nearby markets into buying. Much of the demand is coming through mail order sources. Expansion of the importing business of the Paper House of Pennsylvania has necessitated the opening of an additional suite of offices for C. B. Cobaugh, sales manager. Three rooms on the second floor adjoining the executive offices of the heads of the firm, have been acquired. The offices on the first floor will be devoted exclusively to the sales force. A manager for the Credit Department has also been added to the executive forces. He is Thomas Sheehan, formerly with the D. L. Ward Company. N. R. Ball has been added to the sales force to cover New Jersey. Manager Cobaugh and A. S. Humes will attend the annual banquet of the Central Pennsylvania Typothetæ to be held at the Penn-Harris Hotel on January 17.

Join Weikert & Co.

Norman Hall, Guy Bloom, James N. Hunt, all formerly members of the sales staff of the coarse paper and twine department of the D. L. Ward Company have joined the sales organization of Park Weikert & Co., Inc., 24-26 South Marshall street. They will cover Philadelphia, up-state, New Jersey, Maryland and Delaware for the sales of twine and cordage which the firm will specially feature. The building of the Weikert & Co. is the old headquarters of A. Hartung and has been remodelled into an up-to-date five-story store and warehouse. The firm which was incorporated on December 27, has taken over the agency for several large twine and cordage manufacturers.

General News of the Trade

Opening accounts of the new year's business in the machinery department of the Charles Beck Paper Company under manager H. E. Scherer, has invoked orders for a number of specialties of which the Beck Company is sole manufacturer. They include several out of town orders and among them are numbered a 45-inch Beck Automatic Sheet Cutter to the A. S. Datz Company, 86 South Marshall street, paper dealers, a Beck Rotary Graining Machine for the Boston Paper Box Company, Malden, Mass.; 36-in. Beck Rotary Sheet Cutter for the Friend Box Company, Salem, Mass., and other orders that are about to be completed.

The annual meeting of the Garrett-Buchanan Company was held during the week when the former officials were re-elected. They are: John H. Sinex, president and treasurer; Morgan H. Thomas, vice-president and general manager; Wm. E. Coe, assistant treasurer. These executives were also elected to the board of directors.

Several improvements have been made in the mechanical department of the Dyson Paper Board Company, 1506 North Warnock street. Since the removal of the plant, operated by James N. Dyson, from Second and Vine streets, to its present quarters, broad expansion in the special tube making department has required an ad-

(*Continued on page* 56)

MO och DOMSJÖ
AKTIEBOLAG
STOCKHOLM, SWEDEN

We have for immediate shipment from dock at Boston and Baltimore limited quantities of the Mo and Domsjö

M D M

1st QUALITY
STRONG
CLEAN

UNBLEACHED SULPHITE

For Samples and Quotations
Write or Telegraph

A. J. PAGEL & CO., Inc.

347 Madison Avenue New York City

A. STORRS & BEMENT CO. IN BUSINESS 75 YEARS

This Event as Well as the Sixtieth Anniversary of the Connection With the Firm of John J. Boyle Is Celebrated by the McQuillen Associates With a Dinner at the Boston Shoe Trades Club—Boston Paper Merchants Receive Complaints About "Brittle" Paper—Demand for All Lines of Paper Continues Quiet With Some Advances in Board—General News of the Boston Trade.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., January 16, 1922.—A. Storrs & Bement Company, paper merchants, of Boston, Mass., have just reached an interesting double anniversary, which was celebrated by a dinner and dance given at the Boston Shoe Trades Club by the McQuillen Associates, the benefit association of the employees. The dinner was preceded by the annual meeting and election. Almost the entire membership, as well as the firm, were present at the party.

The two events celebrated were the completion of the seventy-fifth year of the business, which was founded in 1847 and is the oldest paper house in New England; and the rounding out of sixty full years of continuous service by John J. Boyle, who is still an active member of the sales force. Mr. Boyle joined the concern as an errand boy in January, 1862, and has made a record which is believed to be unequaled among paper salesmen.

The house was founded by Amariah Storrs in 1847, and long specialized in cardboards and glazed papers. The business did not for many years grow to large proportions, but its sound condition is shown by its survival of the Civil War and the great Boston fire of 1872 which destroyed the warehouse. After thirty-eight years the firm name was changed to A. Storrs & Bement Company in 1884. In 1887 the firm was purchased by William F. McQuillen, Robert C. McQuillen, his brother, and Charles M. Bryant, three young and active men then already well known to the printing trade.

A new policy of expansion began in 1887 and the scope of the business responded to the persistent hard work of the owners. Many new lines have been constantly added, tending in recent years to include most of the best known nationally advertised brands. The whole organization has greatly expanded until the concern is now one of the largest in New England.

Two very severe blows were suffered when in 1912 R. C. McQuillen and in 1916 Mr. Bryant died. Under the present management of F. B. Cummings, president; W. B. Stevenson, vice-president, and W. F. McQuillen, treasurer, the concern has rapidly and constantly increased the volume of business transacted.

The reputation of the firm for square dealing is too well known to need comment; and the friendly opinion of the printing trade, coupled with far-sighted and skilful management, promise great success in the years to come.

John J. Boyle is one of the oldest men in years and one of the youngest in heart, in the paper business. He is a native and long-life resident of Boston. For many years he has been a conspicuously successful salesman in Boston and eastern Massachusets, with a steady high yearly total of sales, and the high opinion and good will of all who came in contact with his genial personality. Mr. Boyle still looks after a number of customers in Boston, as well as acting as a salesman in the store. He was active in Boston politics for many years, being elected councilman five years from old Ward 8, and he served ten years in the Ninth Regiment, Mass. Volunteer Militia.

Trouble with "Brittle" Paper

Boston paper merchants and printers feel somewhat more at ease this week with the announcement that the source of a lot of "brittle" paper which flooded this and other markets during the past week has been located.

Discovery of the so-called brittle material has caused no end of speculation in paper circles here, considerable embarrassment to several of the best known houses and, according to reliable information, a loss of many thousands of dollars to the mills.

The trade, however, according to one official, may now feel reasonably certain that no more of the stock will be circulated as every warehouse and every piece of goods billed for shipment is undergoing a rigid examination.

According to the most reliable information possible to obtain the brittle paper is the output of some "diseased" basic raw material and affects all grades, high and low.

In the Boston market sulphite bonds, coated book, covers, and uncovered books were noticeably affected. In Philadelphia other grades appeared brittle according to information received here.

A strange fact, and one that will undoubtedly call for some research work, is that some of the material goes to pieces in one climate and not in another. For instance, paper out of the same lot coming to Boston, was tested and found to be "falling to pieces," once it was folded. Another consignment from the same lot, same mill, was sent West, another South, another North, and in some instances proved to be all right. One scientist in this section claims that climatic condition has much to do with it.

In the meantime orders have continued to come back to Boston houses with well justified kick from customers who saw the paper actually fall apart before their eyes. However, Boston dealers have done everything humanly possible to adjust the matter, not only with their customers, but at the source of all the trouble also, and they announce that "brittle paper" will not show itself again if there is any physical way to prevent it.

It was also explained, and this fact throws an air of "mystery" over the entire affair—that the so-called brittleness does not show up in the laboratory test at the mill. This, according to several Boston merchants, is the most puzzling feature.

Market Continues Dull

Business in most all branches of the trade remains quiet. Prices seem a little firmer in old paper and there has been some advance in board prices—chip being around $37.50 and scheduled to remain at this price for some little time. Board men report a few orders.

Printers continue to buy in small lots—as needed. With prices still uncertain they claim that it is poor business to do otherwise. Salesmen of the John Carter & Company, Inc., had a lively meeting this week with officials of the company, giving some "straight talks from the shoulder."

General News of the Trade

Charles L. Wilkins was elected president of the Boston Carton Club at the organization's annual meeting this week at Young's Hotel; S. W. Hyde, vice-president, and F. C. Babcock, secretary-treasurer. Ex-President Alfred J. White presided and about forty members attended.

President Joseph H. Perry of the New England Paper Box Manufacturers' Association stated that the annual convention of the New England association would be held February 8 and 9 at Young's. Ernest R. Spaulding talked on the proposed repeal of the minimum wage law.

Members of the New England division of the National Paper Box Manufacturers' Association are looking forward to the two-day session to be held here on February 8 and 9 at Young's Hotel. There will be a banquet on the evening of February 8.

Mr. Hurd of A. Storrs & Bement Company this week will escort a party of Boston advertising men to the S. W. Warren plant outside Portland, Me., where the entire group will be guests of the officials for two days, during which time the entire plant will be inspected and the work of manufacturing paper explained.

10"6 PLY BLUE STREAK
20 X 84" REVOLVING SCREEN
30'0" C/C
CONVEYING TAILINGS FROM SCREEN TO 6 McCULLY CRUSHER
30" 8 PLY BLUE STREAK CONVEYOR
40'0" C/C
55'0" C/C
41'6" C/C
14"6 PLY BLUE STREAK
20'0" C/C
FLOOR LINE
DRIVEN BY 90" PULLEY ON JACK WHICH IS DRIVEN BY ROPE DRIVE FROM ENGINE
OUTLINE OF ELEVATOR BELT
and drives in plant A
Elevator Data:
Weight of bucket 42 lbs.
Elevating crushed stone 8" max. lumps
Speed 200 F.P.M.
Marble Cliff Quarries Co.
Columbus, Ohio.
Specified Elevator Belt
GOODYEAR BLUE STREAK
38" 10 Ply

Blueprint sketch and insert photograph of Goodyear Blue Streak Belted Bucket Elevator in the service of The Marble Cliff Quarries Company, Columbus, Ohio

Copyright 1921, by The Goodyear Tire & Rubber Co.

Five Years of Lifting—and the G. T. M.

"The best record ever made on elevator service in our plants," says H. J. Kaufman, Assistant General Manager of The Marble Cliff Quarries Company, Columbus, Ohio, "was made by a Goodyear Blue Streak Belt, specified to the job by a G. T. M.—Goodyear Technical Man."

Every quarryman knows the punishment a belt gets in bucket elevator service. It is exposed to changing weather. It is showered constantly with grittily abrasive stone dust. It is subjected continually to sudden and severe strains as the buckets take up their loads of rock. It has to stand up to the steady pull of the loaded buckets as they rise.

No wonder that ordinary belts, coming to such a job without any special construction in their favor, swiftly developed the troubles the Marble Cliff's superintendent experienced with them for years. They averaged only a few months in life; the very best of them lasted two years, and was regarded as a marvel.

Then the G. T. M. came along, and his proposal, to analyze the elevator requirements and specify a belt exactly to those requirements, impressed the Company's officials. His study included every mechanical detail of the problem—the weight and number and spacing of the buckets, the average load, the belt speed. The plant superintendent co-operated, supplying full data on the working conditions.

A Goodyear Blue Streak Belt, 38-inch, 10-ply, was the G. T. M.'s recommendation. It was installed in 1914—the first year of the World War. It was removed from the pulleys on May 1, 1919, five months after the end of the war, with the trouble-free service record of having carried between 1,500,000 and 2,000,000 tons. After withstanding every hardship in the day's work for five whole years, it was retired in favor of the new Goodyear Blue Streak Belt that is already in its third year of lifting.

The Goodyear Analysis Plan, the expert services of the G. T. M., and the inbuilt worth of Goodyear Belt construction may be put to work profitably in your plant. Whether your problem is one of Conveyor or Transmission Belts, whether it involves a single drive or an entire factory, the G. T. M. will gladly undertake the study of it for you. For further information about the G. T. M. and Goodyear Belts, write to The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR

PAPER DEMAND IN CHICAGO DOES NOT SHOW EXPANSION

Improvement in Paper Industry Slower Than Anticipated—Confidence in Steady Improvement Throughout February and March—Inquiries Increasing and Greater Volume of Business Expected Soon—Plans for Box Makers Convention—Delegates Will Arrive by Air—While Plans Are Yet Incomplete Preparations Are Being Carefully Worked Out to Stage a Banner Meeting.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, January 16, 1921.—While the placing of paper orders in Chicago is said to be showing improvement it is not as good as some members of the industry here anticipated earlier in the month and just prior to the opening of the new year. However, still optimistic and confident that a gradual improvement will continue to make itself evident, the trade almost unanimously say that they look for a change for the better next month and during March.

"Business this month can not be expected to run high," one mill representative said last week. "Inventory has been taking a lot of time with many of the jobbers and their trade, and before buying starts to be good at all, a settled condition is required among the consumer buyers, when they can accurately estimate their requirements for the future."

This mill representative looked forward to an increased call for paper of all kinds and grades during February with a better feeling existing in all branches of the trade.

Inquiries are said to be coming in very good right now, indicative of a demand which will shortly assert itself.

Plans for Box Makers' Convention

A record attendance is now looked for at the Western Division of the National Paper Box Manufacturers Association Convention, to be held at Drake Hotel, Chicago, January 25, 26 and 27. Arrangements which are now being completed for this big event of the year in the paper box industry, assure a very interesting and instructive meeting.

The Publicity Committee, consisting of George J. Kroeck, chairman, Harry G. Williams, of the C. L. La Boiteaux Company, and Harry A. Zorn, of the Zorn Paper Box Company, has announced that the "Kink" will be waiting to hand every out-of-town member the key to his room at the hotel upon his arrival. This committee has also announced that it is sending out invitations to the members by aoroplane. Schedules of travel by the airline have been made up with rates and time of flight from cities within a radius of 400 miles of Chicago, the "Convention City." Limousine planes will be used. This is the first time any association has attempted to bring members to such a gathering in Chicago by aeroplanes, and if any of the members take up the idea it will prove an innovation.

The reception committee has arranged to have one of their members fly out to meet all members of the Association who decided to come by air. They will also meet all trains and have arranged with a taxicab company to handle transportation from the depot to the Drake.

Robert H. Ritchie, president of the W. C. Ritchie & Co., and chairman of the Western Division of the National Paper Box Manufacturers Association, has announced that there will be only one forenoon meeting to be held on the first day of the convention, January 25, starting at 10 a. m. The other two mornings are to be left open to the discretion of the members to do with what they want to.

While the program has not been definitely completed the committee in charge is able to make an announcement to the effect that it will be something worth hearing. Several speakers of note have been placed on the program to speak on various subjects of vital interest to the industry at large. Uniform Cost Accounting and Estimating will be taken up as one subject. George H. Tomkins, secretary of the Carton Club of Chicago, will talk on the Credit Bureau, and the benefits to be derived from such a department operated correctly. John W. Thomas, vice-president of the Central Trust Company, will talk of credits from a banker's view point. Frank Stockdale, president of The Stockdale Service, Inc., will address the meeting on the subject, "Making the Package Speak for the Goods." Judge J. Kent Greene will deliver an address on Commercial Arbitration as a means of settling business disputes out of the legal courts. Judge Greene has been in charge of the Commercial Arbitration Court, being run under the auspices of the Chicago Association of Commerce. Harry F. Atwood, an authority on Government and legislative history, will deliver an address. Other speakers are being arranged for.

There will be a banquet at the Drake, Friday evening, January 27, when the entertainment committee promises something real novel. Several good speeches are promised to follow the dinner.

General Trade News

The National Association of Corrugated & Fibre Box Manufacturers has announced that effective February 10, 1922, the Consolidated Classification Committee will authorize changes in the rate on freight shipments in corrugated and fiber containers on both cigars and brooms. These changes are contained in Supplement No. 13 to the Consolidated Freight Classification No. 2. These changes are the outcome of hearings held before the Consolidated Classification Committee in New York, Chicago, San Francisco and Atlanta, Ga., last fall.

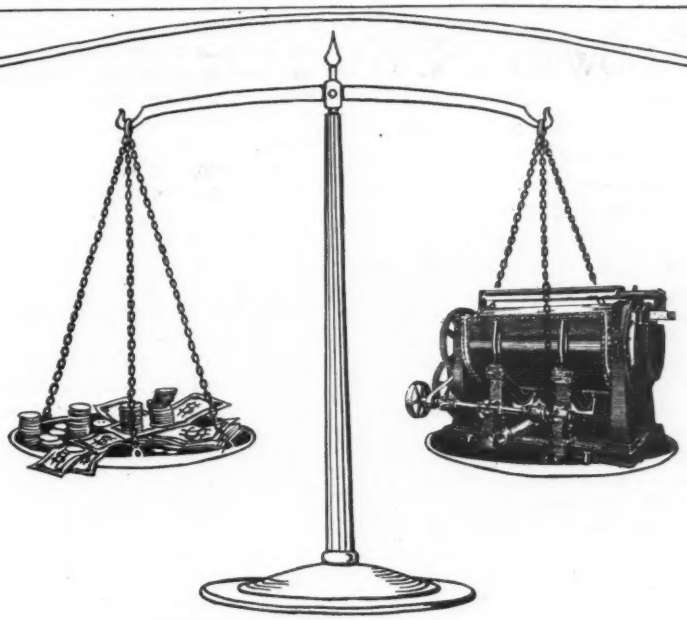
H. G. Prosser, of Bermingham & Prosser, spent last week visiting the mills in the vicinity of Kalamazoo, Mich. Bermingham & Prosser expect to hold their annual meeting the last week of this month.

Wm. W. Baird, of Philadelphia, secretary of the National Association of Paper Box Manufacturers, was in the city recently looking over the preparations being made for the Western Division meeting here January 25-26-27. Mr. Baird left Chicago for Asheville, Tenn., where the National Association will hold its annual meeting in May, to look over the ground there.

William M. Plant, of Plant, Theis & Gould Paper Company, 30 North La Salle street, Chicago, has returned to the city after visiting the mills in the Miami Valley territory.

The Norwegian Market

A dispatch to the Dominion Trade and Commerce Department states that since the month of September there has been noticed a steady improvement in the wood market, and the prices have gone slowly upward; but they are still a good deal too low to leave the sellers any profit. Meanwhile demand is evidently increasing, partly on account of the present situation of Norwegian exchange, and partly on account of their specifications the Norwegian exporters have not profited so much by this improvement as compared with their competitors in neighboring countries. And, just at the moment there seems to be a little standstill on the market. In spite of the very poor prospects at the beginning of the year, quite considerable quantities have been sold during recent months. But the sales have brought no profit to the exporters; on the contrary, they have suffered great losses. The wood pulp market is strong and prices are firm. On account of water scarcity production is being set back and a rise in price is expected shortly. The cellulose market is not very active, although there are still some orders coming in. The paper market is rather weaker, especially for kraft.



MONEY or VALUE

Certain mill men who have never used BIRD SCREENS and who do not know their value say they cannot afford to buy BIRD SCREENS because they can buy other screens for less money.

Screens can be bought for less money, we know, but this also we know—that money has nothing to do with value.

BIRD SCREENS are essentially good value because they give the most in screening service per dollar expended. They continue to give service with satisfaction and to earn profits for their owners long after the purchase price has been repaid and forgotten.

Mill men who use BIRD SCREENS have said that they could hardly afford not to buy them.

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Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.
260 St. James St., Montreal, Canada

BIRD SCREENS

88-197

ABITIBI STOCKS ARE STEADY IN SPITE OF THE DEPRESSION

Company Is Now Turning Out Between 420 and 450 Tons of News Print a Day Which Is the Peak Production in the Firm's History—Aeroplane Co. Formed in Montreal to Take Over Entire Flying Plant and Equipment of the Laurentide Air Service of Grand Mere, Quebec—Firm's Work Will Consist of Aerial Photography to Decide the Value of Timber Limits.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., January 16, 1922.—One of the stocks that have held fairly steady in the face of recent easiness is Abitibi, and the consensus of news on the company operations has been rather more favorable lately. It is stated that the company is now turning out between 420 and 450 tons of news print a day, six days a week, which is the peak production of the company's entire history. In view of the fact that it is stated that the cost of this company's wood is somewhere around $12.50 a cord, the result should be a satisfactory showing in spite of the lower price for news print. It is generally accepted that the Abitibi Company has less high-priced wood to work off than most of the big companies, and can show an unusually low wood cost at any time.

Demand for Paper by China

The Trade and Commerce Department at Ottawa has given out information to the effect that of late years there has been a growing demand in China for paper. Between 1913 and 1920 Chinese purchases of the foreign product practically doubled. In 1913 the value of the paper imported was 7,169,255 Haikwan taels, while last year's figure was 14,159,186. Shanghai is the principal market, having absorbed no less than 8.1 million taels' worth last year. Tientsin, which uses most of the commoner kinds of printing, comes next with just over a million and a half taels. Canton takes considerably less (817,000 taels last year), and Hankow imported direct less than 300,000 taels' worth. Dairen generally takes much more than her last year's supply of 40,791 piculs, which cost 530,000 taels, and Antung's share in the trade was only just over a half of the amount she took in 1919, but the whole of South Manchuria is a good paper market. As to the principal sources of supply, last year's returns placed Japan in the premier position, with shipments amounting to 319,297 piculs, valued at 3,802,987 Hk. taels; the United States being next with 194,095 piculs, valued at 2,874,721 Hk. taels; followed by Sweden, which supplied 182,835 piculs, valued at 2,128,806 Hk. taels; Norway, 136,326 piculs, valued at 1,550,566 Hk. taels; and Great Britain, 60,567 piculs, valued at 1,059,478 Hk. taels.

Paper Making from Papyrus

The bulletin of the Imperial Institute, just received here, contains particulars of a new pulp making industry in Zululand established by the Walmer Papyrus Company, Limited, which is financed by British capital. This company has been granted a concession of Crown lands in Zululand about 80 miles long, varying from 10 to 15 miles in width and extending from the river Umhlatuzi to the northern end of the St. Lucia Lake in Zululand. The greater part of the area is covered with papyrus, which grows in swamps and remains green throughout the year. The roots of the plants form a thick network on which rests a muddy layer of decayed papyrus stem, whilst beneath it there is water varying in depth from six inches to three or four feet, according to the season. The papyrus fields thus consist of an enormous floating mass of plants which is strong enough to carry machinery for cutting and for transporting the stems. The roots branch from the network and, passing through the water, enter the clay beneath.

In this clay, roots are sometimes found to a depth of 10 to 12 feet. The stems grow to a height of 12 to 14 feet, and although they constitute an annual growth, the continual shooting forth of new stems keeps the field green all the year round. The plants form so dense a jungle that it is impossible to walk through it without cutting a path. The vast fields are interrupted by a number of lagoons of a depth of three to six feet, which facilitate the transport of the material.

The green papyrus contains about 80 per cent of moisture, but, after drying in the fields, this is reduced to about 30 per cent, which has been found to represent the best conditions for satisfactory working in the mill.

Total Area of 510,000 Acres

It is estimated that the total area of the papyrus fields on the concession is about 800 square miles (or 510,000 acres). It is found that one acre yields about twenty tons of green papyrus which furnish about two tons of pulp, and hence the total area of 510,000 acres would afford more than one million tons of pulp per annum. Some of the fields are so situated that the cost of transporting the papyrus stems to the factories would be too great for profitable working. Assuming that such fields would amount to 50 per cent of the whole, there would still be sufficient papyrus available for an annual production of 500,000 tons of pulp. It is estimated that the cost of harvesting the papyrus and transporting it to the mills, which will be erected at a number of suitable points, will not exceed 35 shillings per ton of pulp.

The first mill erected by the Walmer Papyrus Company is at Umfolozi by the Engwisa Lagoon. It is close to the papyrus fields and is connected with the railway to Durban by a transport line of 2 feet 6 inches gauge, and five miles long. The mill is equipped for production of "quarter stuff" which can be converted into high-class pulp by treatment with very dilute alkali, and yields about 60 to 70 per cent of bleached pulp.

Aeroplane Company to Protect Canadian Limits

An aeroplane company has been formed in Montreal to take over the entire flying plant and equipment of the Laurentide Air Service of Grand Mere, Quebec. During the coming season this company will take over all cruising work in the St. Maurice Valley, with headquarters at Lac Tortur, Que. The new company is headed by Thomas Hall, president of the Mall Engineering Works and also president of the Canadian Aerial Services; H. D. Wilshire, vice-president of the Canadian Aerial Services, Limited, and Roya Maxwell, former chief pilot in the aerial services of the Laurentide Company, Ltd. The main work of the fleet of aircraft handled by the new company will consist of aerial photography, to decide the value and potential worth of timber limits, replacing the old-time cruisers, whose work through the woods was slow and costly as compared with the modern aerial observation and photographic system; aerial fire patrol, reconnaissance and transportation. They will operate the two H. S. 21, flying boats formerly operated by the Laurentide Company. In addition to this, they are contemplating the purchase of a new Loening flying boat, about the last word in these machines.

With this purchase in view, Messrs. Hall and Maxwell recently visited New York to inspect the machine. This flying machine, Mr. Hall states, has a capacity of five passengers. It can climb to 19,000 feet in 42 minutes, has a cruising speed of 120 miles an hour, and a non-stop cruising range of 600 miles.

The flying boat is a monoplane, of all metal construction, and will be used principally for fire patrol work over the forests of the St. Maurice Valley.

It is also planned that the company's machines shall be used for passenger business, to Lake St. Louis, the Thousand Islands, Murray Bay, etc., with a view to starting really modern flying air transportation in this district next summer.

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PRACTICAL QUESTIONS AND ANSWERS

FOR MILL MEN

A Department for the Solution of the Troubles, Large and Small, That Are Encountered by the Workers in the Mills in the Course of Their Duties in Making Paper and Pulp — All Mill Men Are Invited to Send in Both Questions and Answers—A Free Exchange of Ideas Is Desired — By Active Co-operation This Department Can Be Made a General Clearing House for Information in Regard to Practical Paper Making.

Fuzz on Surface of Paper

QUESTION No. 2553.—We make a good deal of S. and S. C. running approximately 40 per cent each of sulphite and soda and 20 per cent of shavings. Every now and again the paper will have a tendency to fuzz up on the surface, which the printers naturally dislike. We are unable to tell just why this is and would appreciate it, if you could advise through your columns what is the reason.

ANSWER No. 2553.—We can tell you a few things that might make your paper fuzz from the above but of course the reasons will be general as we have not a sample of the paper. If a sample of the paper could be seen the real reason might be told. With the following reasons you might possibly find that one or more of them apply in your case.

In the first place the fiber of your soda pulp might possibly be too short. Brush the stock out more and see if you can lengthen the fiber brush very lightly. At the same time the soda pulp is naturally light will float on top of the sheet. If the pulp is short it would cause the paper to fuzz. Another thing to remember is to watch your cooking of the pulp. Do not get it too soft. If the above does not remedy your troubles would you please send us a few samples and we can make a closer examination.

Answers to This Will Be Appreciated

QUESTION No. 2554.—We are having considerable trouble with white bag paper that contains about 10 per cent moisture. The bags come through very moist or damp. The bag machines run at a speed of 500 or 600 feet.

Can any of your readers suggest some method whereby this moisture can be withdrawn from the paper without making the paper dry and brittle, without slowing down the speed of the machine to any extent? The machine, making paper, evidently hasn't sufficient dryers, which defect cannot be obviated for some time.

Why Paper Fuzzes on Offset Press

QUESTION No. 2555.—Would appreciate an opinion expressed in the column of your valued JOURNAL as to the difference between samples marked No. 20, No. 21 and No. 22, covering, if possible, the furnish, beating, making and finishing. All samples are basis 22 x 28—100.

Sample No. 23, on running through the offset press, fuzzes a good deal on both sides. Ordinarily we only have this kind of trouble on the wire side. Can you explain why?

Does water finish tend to make the sheet curl, say, a sheet similar in weight to samples enclosed on a size 40 x 60?

ANSWER No. 2555.—The first difference noted in the samples is in the color. Of course, this difference is explained by the difference of the amount of color put in the beater when mixing. As to the furnish, it would be impossible to give the furnish of the samples without making a chemical examination and the writer is not in a position to do this. If you desire an accurate furnish, it would be better for you to send the samples to a paper mill chemist and undoubtedly he could give you an accurate furnish of the materials.

Samples No. 21 and No. 22 are softer than No. 20. They have not been calendered down as hard. There is a difference of about .0015 in the caliper. No. 21 and No. 22 are about the same caliper. Also, the stock in No. 21 is beaten up shorter than the stock in No. 22, and the same way, the stock in No. 20 is shorter than that in No. 21. By a very close examination, and without a chemical examination, I would say that the stock was either soda pulp or cotton linters. It is very hard to tell which by the means I have had to use. And again, it might be a combination of both.

No. 23 is run thick to number, so it is soft and at the same time bulky. The sample is .0035 thicker than sample No. 20. This thickness is governed one way or the other, two or three points at the calenders, all depending how much the calenders are weighted down. At the same time, the more the calenders are weighted down, the better finish you will get on the paper. According to the looks of sample No. 23, you would not be troubled with the fuzz you speak of if the calenders were weighted down more. They are not weighted down enough to press the fibers into the boards.

The water finish will not make the board curl if the water finish is applied in the correct manner. If you get more water on one side of the board than the other, you will get a sheet that will curl, but if you get the same amount on both sides, the sheet will not curl to any amount. The back tender will have to watch this very closely, but by so doing he can keep the board very even in the finish.

Making Kraft Paper

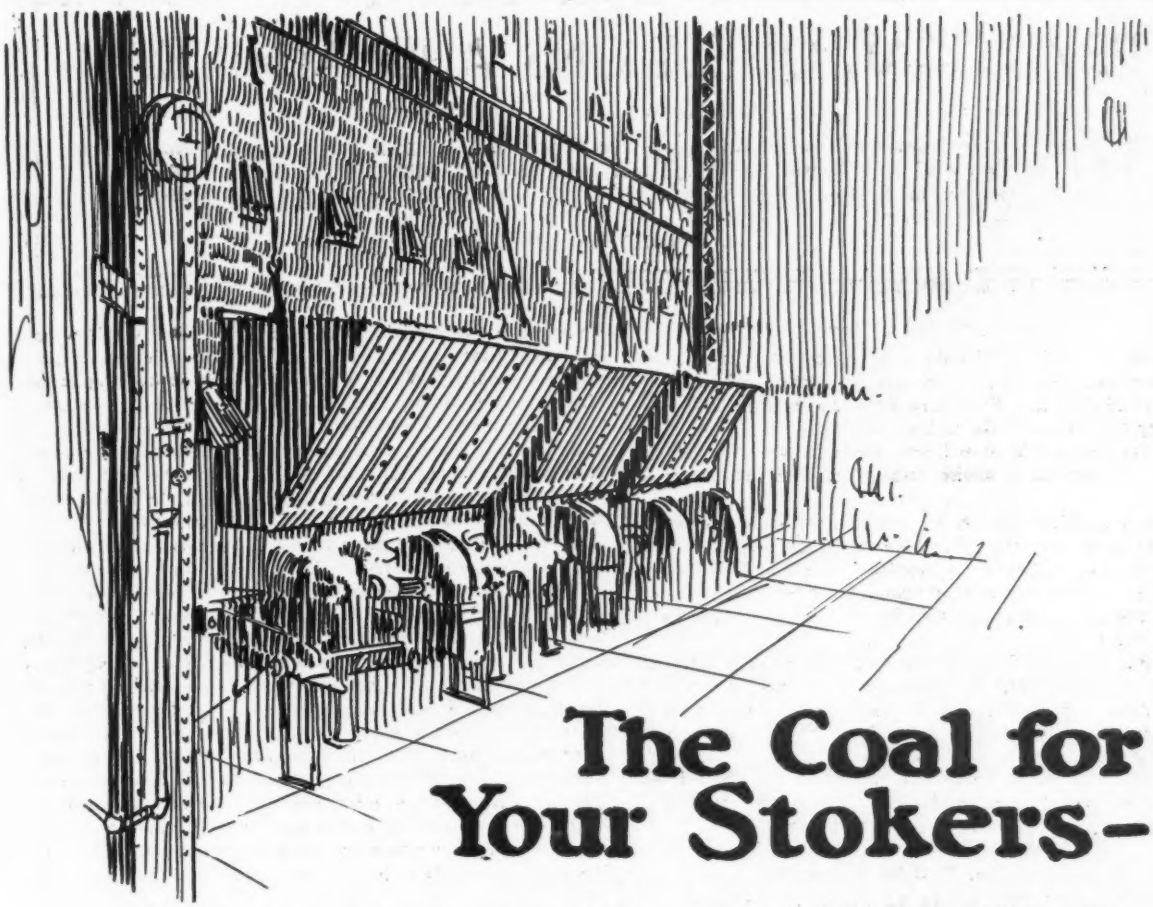
QUESTION No. 2556.—In making No. 1 kraft paper, are only a few beaters and several jordans, or numerous beaters and no jordans used to treat the stock? If they use jordans, is the stock run thick through the jordans or at just average consistency? How fast is the machine run on, say, 40-pound kraft? Does the beating tackle for kraft differ from that for book paper, and if so, how?

How do they generally cook their kraft pulp, by the sulphate or by the soda method?

I would certainly appreciate any information on this you can give me.

ANSWER No. 2556.—In making kraft they generally use both beaters and jordans. The beaters are built so that when the stock is put through them it is not cut all to pieces. The beaters are used to mix the stock and at the same time to draw out the fibers. The beaters should be in such shape that the fibers will not be cut in any way. The jordans are used to further refine the stock and to put it in such shape that it will run with the best of results on the machine. The jordans are used to make the stock just right to suit the varying conditions of the machine. For instance, if the stock is too long, the jordan can be used to cut the stock, or fibers shorter, just as the necessity arises. The stock is put through the jordan at a medium consistency, or, if anything, on the thin side. The speed of the machine varies with many conditions, such as width and number of dryers. It would be impossible to tell you the speed to run 40-pound kraft without knowing the number of

(*Continued on page 28*)



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BARGAIN PAPER COMPANY, Manhattan, New York. Capital, $25,000. Incorporators, R. S. and F. W. Kristeller, J. C. Williams; attorneys, Watson, Kristeller & Swift, 68 William street.

NORMAN C. LYNCH COMPANY, INC., Providence, Rhode Island. To conduct a stationers' printing and manufacturing paper business. Capital, $50,000. Incorporators, Norman C. Lynch, New York; Frederick Lynch and Harold C. Staples, Providence.

MONARCH ENVELOPE MANUFACTURING COMPANY, Wilmington, Delaware. Manufacture of paper, envelopes, etc. Capital, $100,000.

EMMERT MANUFACTURING COMPANY, Manhattan, New York. To make gummed paper and cloth. Capital, $50,000. Incorporators, S. B. and E. Emmert, L. Nissen; attorney, J. A. Morison, 41 Park Row.

CAPITAL INCREASES

EMPIRE PAPER COMPANY, Middleton, Ohio, from $100,000 to $200,000.

QUESTIONS AND ANSWERS

(*Continued from page 26*)

dryers that you have and also the width. The kraft pulp is generally cooked by the sulphate method.

Oil in Wells

QUESTION No. 2557.—At the present time we are having trouble with one of our wells. The water coming from it contains a slight amount of oil. The well is about 175 feet deep and the water is pumped out by means of an air lift. It is a question as to whether the oil is coming from the well itself or whether it is the compressor. The latter has been dissembled and thoroughly examined and no reason could be found for oil leaking by the plungers.

Thinking that possibly you might have had experience in this line from other mills we are writing to you. If you could throw any light on this matter through the columns of your paper we should be very glad indeed. If it is the compressor, is there any way that this oil could be removed from the air?

ANSWER No. 2557.—In answering this question I will have to assume that the water is free from the oil; that is, that the water in the well does not contain any oil from the natural sources. If there is any oil in the water it must come from your compressor. It is almost impossible to use an air compressor without getting oil from the compressor. No matter how careful you are, you are bound to get oil in the well if you have not got the compressor piped up correctly. I mean by that, that if you are pumping the air direct into the well from the compressor you will get a certain amount of oil through the pipe from your compressor, which will naturally get into the water. I would assume from the fact that you are getting oil in the water that you are pumping the air direct from the compressor to the well. This method is wrong. You should have a large receiving tank for your air. A tank that will stand several times the air pressure at which you have to pump the air. Pump the air to the receiving tank first. Run the pipe from the air compressor to the receiving tank. This pipe should be tapped in your tank at one end and about in the middle. Then tap the tank on top at about the middle with the pipe that runs to the wells. Out of the bottom of the tank tap another pipe with a valve to draw out the oil which collects in the tank. About ever so often this valve should be opened so that the tank will blow out the oil. By using this method the oil which comes from the compressor in the air will settle in the tank, and not go to the well. If one tank does not remove all the oil, you can connect another tank the same way. Run the pipe that comes out of the top of the first tank to the end and center of the second tank, then run the pipe that comes out of the second tank at the top to the well. By this means you will get air to your well which is free from oil. If you connect the tank or tanks to the compressor be sure that you put a safety valve on the tanks so that when the pressure gets to a certain point the safety valve will blow. I think that if you follow the above directions you will not be troubled with oil any more in your water. If you should wish a diagram of how to connect up the above, please send the following data: Size of outlet of compressor and, also, capacity of compressor.

Corrugation of Calender Rolls

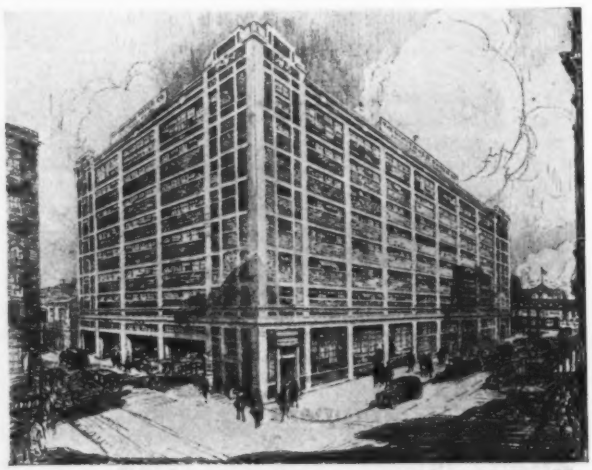
QUESTION No. 2558.—We will be pleased if you can give us some information in your "Practical Questions and Answers" column in your next edition relative to the corrugation of calender rolls in the making of water-finish papers.

We have considerable trouble with the rolls on which the water is applied regarding this corrugation. What we mean by corrugation is, the rolls become ridged all the way across, as well as entirely around the roll, and this causes the roll to mark the paper. In fact, if we were not to change it this condition would become so bad that it would cut the sheet in two.

In this connection we have done everything imaginable in order to overcome this difficulty, but thus far have not been successful.

Any information you may give us as to what causes this corrugation, and also how to remedy it, will be very much appreciated. We also find we have more trouble along this line in the winter than during the summer.

ANSWER No. 2558.—I should judge that your calenders are driven by a bevel pinion and gear. The pinion is generally on your counter shaft on which there is a friction clutch. And this drives a beveled gear with wooden cogs. Regardless of whether you have a cut pinion or just a cast pinion with this arrangement, you are bound to get the corrugation you speak of unless you keep the pinion and gear in perfect mesh, and at the same time, when the wooden cogs get the least worn, you will get the same result. It is almost impossible to get away from it with the above installation. The corrugation comes when the wooden cogs have become the least bit worn, and when they reach that condition you get a certain amount of back lash. The minute you get a back lesh, you will notice that your calender rolls commence to corrugate. They will become ridged the full face of the roll, and also the full distance around them. In such a situation I would say that you should install a herringbone gear. By installing such a gear you will not get any amount of back lash. When you know the cause of a trouble it is easy enough to remedy it. I would advise that you consult some maker of the above gears and undoubtedly he will be able to supply exactly what you require, and without question you will be rid of the trouble you speak of.



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New York Trade Jottings

The result of the American Paper and Pulp Association ballot to ascertain the sentiment of member mills on American Valuation is now being tabulated.

* * *

Charles Beebe of the Union Talc Company left New York Tuesday, January 17, to spend a few days in Ohio on business. He will return the first part of next week.

* * *

Charles F. Heapy has withdrawn as president and director of Charles W. Ridder & Co., Inc., and is now a direct mill representative with offices at 299 Broadway.

* * *

Ellsworth D. Gosling has retired as officer and stockholder from Gosling & Farr, Incorporated, agents for paper box board and lining, 141-3-5 Wooster street, New York City.

* * *

Moore & Thompson Paper Company has reverted to its former owners, Frank A. Moore and Frederick L. Thompson. The Eagle Paper Company no longer has any connection with this concern now engaged in manufacturing its former line of kraft and kraft specialties.

* * *

Calvin L. Robinson, dealer in wood pulp and paper, has removed from 16 East Forty-second street to the Borden Building, 350 Madison avenue. Mr. Robinson is sole agent in the United States for J. A. Kjellberg & Sons, Gothenberg, Sweden. Telephone Vanderbilt 4913.

* * *

Chester M. Robbins, for five years with the American Writing Paper Company, is now associated with the International Paper Company in the sales department. Mr. Robbins has been indisposed for several days with an injury to his back, but it is expected that he will have recovered completely by the first of next week.

* * *

The National Association of Corrugated and Fibre Box Manufacturers met Wednesday and Thursday, January 18 and 19, at the Hotel Pennsylvania. Morning and afternoon sessions were held on both days and a banquet Thursday evening. The exhibition in connection with the convention was considered very successful and fulfilled the anticipations of those interested.

* * *

Judge A. N. Hand yesterday appointed Percival Wilde and Walter S. Wyman of Augusta, Me., receivers for the Cushnoc Paper Company, pulp and paper manufacturers, of Augusta, Me., with offices at 52 Vanderbilt avenue, under $25,000 bond. The liabilities are said to be $1,000,000 and assets about $500,000. The company is said to have been operating since last July under the supervision of a committee of the larger creditors.

* * *

Judge A. N. Hand has appointed Percival Wilde and Walter S. Wyman of Augusta, Me., receivers for the Kennebec Paper Company, pulp and paper manufacturers, of Augusta, Me., with offices at 52 Vanderbilt avenue, under $25,000 bond. The liabilities are said to be $800,000 and assets about $400,000. The company is said to have been operating since last July under the supervision of a committee of the larger creditors and an extension has been in contemplation.

* * *

The New York Forestry Club met Tuesddy, January 17, at the Yale Club with Ferris Meigs guest of honor. After luncheon R. S. Kellog of the News Print Service Bureau spoke on the Snell bill hearing, Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association, in absentia, on the work of the United States Chamber of Commerce Committee on the Reclamation of Waste Lands, and E. A. Stirling, chairman of the Forestry Club, on topics of general interest.

* * *

Present plans of Texas Company directors, says the *Wall Street Journal*, are for a distribution of its immense sulphur properties during 1922 as a stock dividend. The present plan is to spend $5,000,000 on the property in drilling, development, etc., and then turn the stock over as a gift to stockholders. Some experts declare this property is the most valuable sulphur bed yet opened in this country. It has been appraised at times by sulphur people as high as $60,000,000.

* * *

The paper trade, at the lunch to be given the Hon. Nathan L. Miller, Governor of New York State, by the Merchants Association on January 26, at 12.30, will be represented by: Wm. Holden, Holden & Hawley; Spencer Lathrop, Lasher & Lathrop; H. W. Vernon and A. C. Damon, Paul E. Vernon & Co.; Hy. Pfalzgraff and Charles Vernon, Vernon Brothers; J. A. Canfield and guest, Canfield Paper Co.; K. Warner, J. F. Sarle & Co.; Alfred Kinn, J. E. Linde Paper Co. These gentlemen will attend because they wish to show the Governor by their presence that they are heartily in accord with him in his work for economy in the administration of the State Government.

Bids and Awards for Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 18, 1922.—The purchasing officer of the Government Printing Office has received the following bids for 5,000 pounds 26½ x 41—100 India tint coated cover paper: R. P. Andrews Paper Company, at $.119 per pound; the Whitaker Paper Company, $.0957; Dobler & Mudge, $.0965; Old Dominion Paper Company, $.13356, and D. L. Ward Company, $.12.

The purchasing officer of the Government Printing Office has received the following bids for 10,500 pounds of various sizes binders board: R. P. Andrews Paper Company, at $.0319 per pound; Mathers-Lamm Paper Company, $.01009; C. L. La Boiteaux Company, $.055; Geo. W. Millar & Co., $.043; Whitaker Paper Company, $.0406; Old Dominion Paper Company, $.0369; Philip Rudolph & Son Company, $.037225; Denison-Pratt Paper Company, $.0675 and $.0425.

The Whitaker Paper Company has been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 5,000 pounds of 26½ x 41—100 India tinted coated cover paper at $.0957 per pound, bids for which were opened on January 9.

C. J. West To Be Editor of Chemical Abstracts

The average daily production of news print paper by the mills reporting for December amounted to 82.1 per cent of the average daily output during the three months of greatest production in 1920, allowing for new machines recently started.

Clarence J. West, Chairman of the Committee on Bibliography, TAPPI, has been appointed assistant editor of Chemical Abstracts in charge of the Cellulose and Paper Section. He will welcome suggestions from the Technical Association as to ways and means of improving the Section and of making it of the greatest value to the Industry.

Monroe Paper Products May Erect Box Factory

[FROM OUR REGULAR CORRESPONDENT.]

MONROE, Mich., January 16, 1922.—The Monroe Paper Products Company is asking stockholders for permission to float a $400,000 bond issue, the funds so derived to be used in the erection of a box factory.

Nilsen, Rantoul & Co., Inc.

140 Nassau Street **New York, N. Y.**

Exporters, Importers and Dealers in All Grades of Pulp and Paper

Exclusive Representatives in the United States, Canada and Mexico, for

Diesen Wood Company

Wiborg **Finland**

MANUFACTURERS OF

Superior Quality Easy Bleaching and Bleached Sulphate Pulps

Write for Samples and Further Information

Nilsen, Rantoul & Co., New York, N. Y.

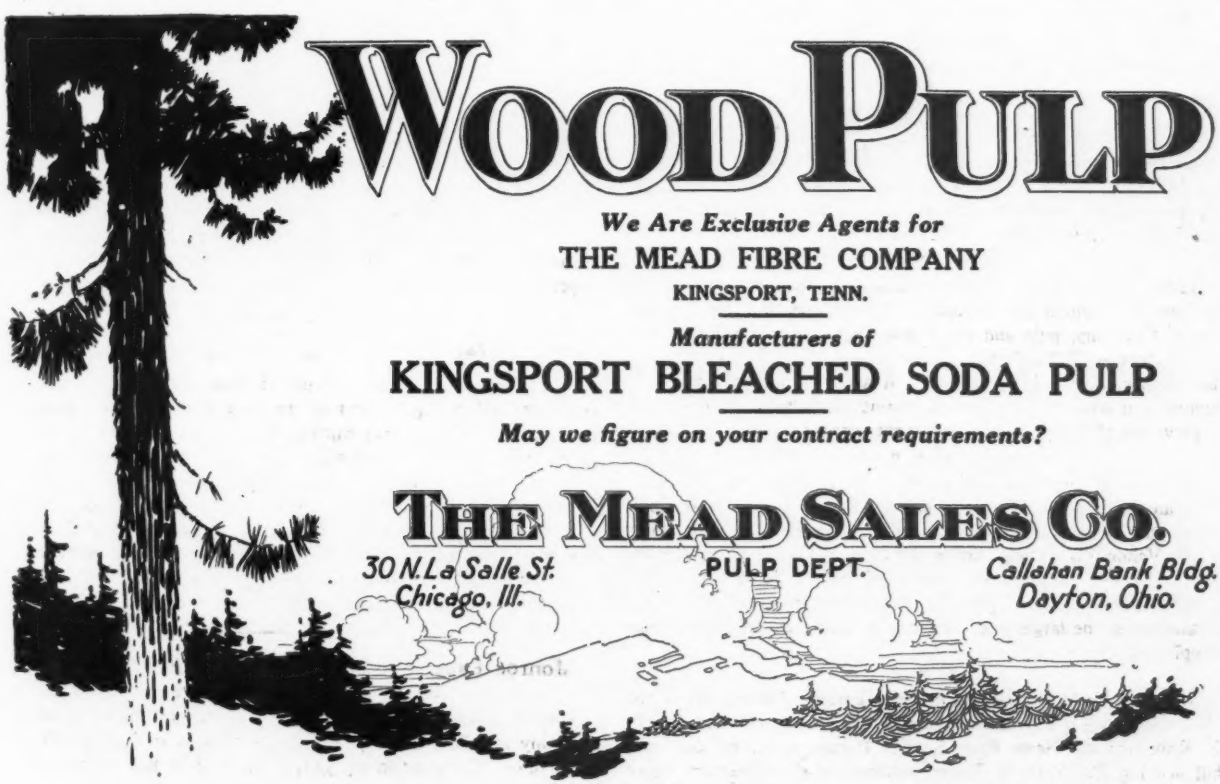
ASSOCIATED WITH

Anth. B. Nilsen & Co., Ltd., Christiania **Nilsen & Co., Ltd., Stockholm**

CONNECTIONS ALSO IN

BARCELONA **PARIS** **MEXICO CITY**

3



WOOD PULP

We Are Exclusive Agents for

THE MEAD FIBRE COMPANY

KINGSPORT, TENN.

Manufacturers of

KINGSPORT BLEACHED SODA PULP

May we figure on your contract requirements?

THE MEAD SALES CO.

30 N. La Salle St. Chicago, Ill. PULP DEPT. *Callahan Bank Bldg. Dayton, Ohio.*

Trade-Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to paper and pulp field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search, free of charge, on any mark they may contemplate adopting or registering.

SANICO—No. 143,912. The Sanitary Products Corporation of America, Philadelphia, Pa. For Paper Luncheon Sets.

OVERLAND—No. 114,983. Writing Paper Company, Holyoke, Mass. For Writing-Paper and Mailing-Envelopes.

FLEXOR—No. 112,810. Boston Last Company, Boston, Mass. For Embossing-Leaf—Namely, a Coated Paper Used in Printing and Embossing.

THE DIAMOND PRESS within diamond—No. 147,341. The Diamond Press, New York, N. Y. For Printed Paper Stationery—Namely, Letter and Bill Heads and Writing Paper.

TWILIGHT PARCHMENT on a dark square background, with light disc in center, within which is dark triangle and letter T—No. 148,566. Trinity Bag and Paper Company, Inc., New York, N. Y. For paper for wrapping purposes.

OLD CHESTER MILLS.—No. 153,326. American Writing Paper Company, Holyoke, Mass. For Writing and Printing Papers, Papeterie Paper, and Mailing Envelopes.

"FEDERAL" PRODUCTS on representation of roll of material over dark disc.—No. 148,988. The Federal Asbestos Company, Milwaukee, Wis. For Air-Cell Paper.

ARRIVE—No. 153,966. American Writing Paper Company, Holyoke, Mass. For book paper.

DECKLE D'AIGLE—No. 153,791. American Writing Paper Company, Holyoke, Mass. For writing and printing papers.

NORMAN—No. 153,321. American Writing Paper Company, Holyoke, Mass. For writing and printing papers and mailing envelopes.

VOGUE STATIONERY DE LUXE on rim of circle surrounding picture of flying bird—No. 153,246. Max Grab Fashion Co., New York, N. Y. For social stationery, menus, stationery cards, writing paper and envelopes, and holiday cards.

LINWEAVE—No. 152,774. United States Envelope Company, Springfield, Mass. For writing, printing, ledger, record, envelope, book, announcement, invitation and cover papers, envelopes, cardboards and Bristol boards, and Tissue Paper.

COASTMADE—No. 152,541. Coast Envelope Company, Los Angeles, Calif. For Correspondence Envelopes.

PICTURE OF WOMAN SEATED AT LOOM—No. 150,983. Stevens & Thompson Paper Company, Greenwich, N. Y. For paper towels.

FRANCHISE—No. 150,962. Fox River Paper Company, Appleton, Wis. For writing paper.

COUNTRY CLUB below picture of a country club—No. 150,265. The Foley Paper Company, Springfield, Mass. For toilet paper.

DRAGO PRODUCT with picture of dragon—No. 150,102. Dragon Paper Mfg. Co., Inc., New York and Long Island City, N. Y. For waxed paper.

MILLBRIDGE—No. 152,967. Springfield Glazed Paper Co., Springfield, Mass. For coated papers in friction, plate, flint, embossed, surface-proof plate, and other finishes for general uses, such as labels, lithographs; box, confectionery and package wrappers; book covers, writing pads, games and toys, etc.

BEAR BRAND—A BEAR FOR WEAR, on rim of oval with picture of a bear in center—No. 155,174. Holbrook & Gibson, Chicago, Ill. For typewriter ribbons and carbon paper.

A W C crossed by central band with name American Wholesale Corporation—No. 136,053. American Wholesale Corporation, (Baltimore Bargain House) Baltimore and Cumberland, Md. For lead pencils, colored pencils, Notebooks, ledgers, pen points, stylographic pens, penholders, paper weights, paper files and binders, mailing envelopes, writing papers, ink and pencil erasers of rubber and rubber composition, crayons, fountain pens, blotters, rulers for school and desk use, pencil sharpeners, desk pads, toilet paper, wrapping paper, thumb tacks, paper fasteners, writing tablets, inkwells and letter openers.

Woodlands Section Grows

Secretary O. M. Potter of the Woodlands Section of the American Paper and Pulp Association has made a report for the first year of the section's existence, which indicates a surprising amount of work accomplished, particularly for so young a group. This report, which has just been sent to the members of the section, points out that while the section was organized in November, 1920, it began active operations about January 1, 1921, so is just completing its first year of real work.

During the twelve months just passed its membership has increased, without any definite membership campaign, to ninety, with representatives from many of the larger pulp and paper companies of the United States.

Report on News Print Dumping

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 18, 1922.—The Customs Service of the Treasury Department has now received reports on news print dumping from Norway, Sweden and Germany in connection with the investigation which is being made regarding the dumping of news print paper on the American market.

The reports are being tabulated by officials of the Customs Service, but it is expected that something definite will be arrived at in the very near future. All of the preliminary indications are that there is no dumping of foreign news print paper on the American market.

Wants Tariff on Paper Tubes

[FROM OUR REGULAR CORRESPONDENT.]

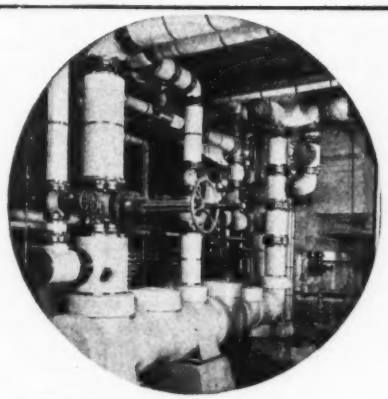
WASHINGTON, D. C., January 16, 1922.—F. R. Chase of Providence, R. I., representing the F. K. Chase Company and the American Paper Tube Company, appeared before the Finance Committee last week and asked for a tariff on paper tubes. He said in part:

"We, the undersigned, manufacturers of paper tubes for textile and other purposes, respectfully petition for the enactment in the new Tariff Law of a clause in 'Schedule M—Papers,' granting due and equitable protection to our products, and petitioning for the insertion in a proper paragraph of the words 'Paper Tubes, Tapered or Parallel,' 5 cents per pound and 35 per centum ad valorem."

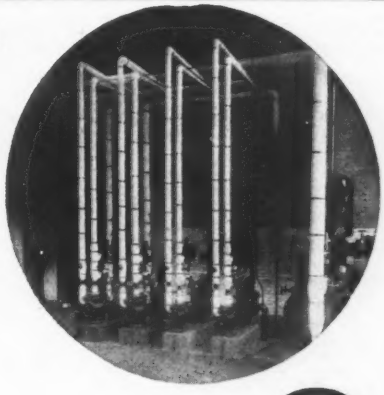
Beaver Brook Paper Mills Busy

[FROM OUR REGULAR CORRESPONDENT.]

DANBURY, Conn., January 16, 1922.—The Beaver Brook Paper Mills, Inc., which manufactures wrapping, hardware, textile and colored specialties and of which J. E. Gallagher is president and manager, has just installed a North Save-all in its mill and it is giving splendid satisfaction. The plant is running full time and is very busy.



CRANE HORIZONTAL
STEAM SEPARATOR



We are Manufacturers of about 20,000 articles, including

Valves, Pipe Fittings and Steam Specialties

made of brass, iron, ferrosteel, cast steel and forged steel, in all sizes, for all pressures, and all purposes, and are distributors through the trade, of pipe, heating and plumbing materials.

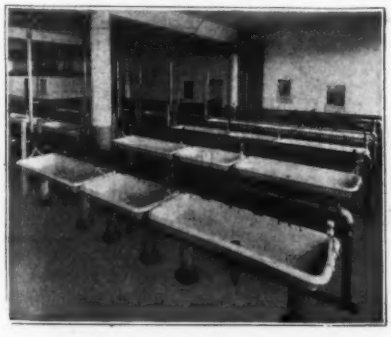
1855——CRANE CO.——1922

836 South Michigan Avenue, Chicago

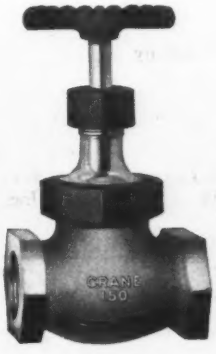
Branches in 70 leading cities

Works—Chicago and Bridgeport

CRANE FACTORY WASH SINKS



BRASS GLOBE VALVE



CRANE FACTORY LAVATORIES

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending November 30, 1921, and for the Eleven Months Ended November 30, 1921, as Compared with Corresponding Months of Two Previous Years.

IMPORTS—PAPER.

Paper and Manufactures of.	November				Eleven Months Ended November 30					
	1920.		1921.		1919.		1920.		1921.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Books, Music, Maps, Engravings, Etchings, Photographs, and other Printed Matter.....Free	----------	$413,083	----------	$356,914	----------	$3,278,307	----------	$5,144,576	----------	$4,036,133
.....Dut.	----------	216,203	----------	172,105	----------	1,086,200	----------	2,078,513	----------	1,972,883
Decalcomania paper, not printed.....Free	----------	26,514	----------	3,697	----------	114,606	----------	144,979	----------	175,680
Lithographic Labels and Prints (except Post Cards).....lbs..Dut.	116,888	77,517	120,573	52,521	203,122	205,361	739,376	535,646	1,197,342	723,233
Paper Hangings.....Dut.	----------	25,092	----------	31,992	----------	73,448	----------	307,269	----------	337,490
Photographic .....lbs..Dut.	55,708	18,064	135,894	17,361	257,784	127,993	895,654	292,018	1,695,174	324,380
Printing Paper—										
News print.....lbs..Free	122,496,900	6,973,419	149,088,782	5,858,609	1,151,215,166	39,890,594	1,296,158,428	60,104,315	1,425,689,265	73,044,705
All other .....lbs..Dut.	1,180,362	143,840	16,156	1,390	152,168	54,542	3,086,255	347,080	1,350,537	196,426
Post Cards, Souvenir.....Dut.	----------	36,347	----------	19,405	----------	26,721	----------	155,933	----------	123,833
Pulp board, in rolls, not laminated..lbs..Dut.	14,278,470	444,321	2,795,762	71,697	81,043,255	2,049,786	83,411,066	2,501,037	35,317,716	1,012,098
Surface-coated .....lbs..Dut.	278,375	66,025	38,872	11,486	124,784	49,175	747,501	248,477	716,729	187,458
Wrapping .....lbs..Dut.	333,890	39,745	1,230,403	52,671	4,126,553	354,166	4,581,974	424,122	9,761,458	465,908
All other.....Dut.	----------	366,140	----------	148,573	----------	1,488,681	----------	2,428,933	----------	2,822,955
Total Paper, and Manufactures of.....	----------	$8,896,310	----------	$6,708,481	----------	$48,799,580	----------	$74,772,898	----------	$85,423,182

CRUDE PAPER STOCK.

Rags (except woolen).....lbs..Free	16,239,478	$723,0	17,525,315	$233,466	81,567,089	$2,706,523	261,004,680	$9,355,672	94,599,057	$1,680,819
All other kinds of paper stock...lbs..Free	16,870,170	555,6	15,365,007	323,958	109,782,812	3,554,680	223,282,557	8,342,431	100,350,926	2,121,341

WOOD PULP.

Mechanically ground.....tons..Free	17,181	$1,331,692	31,700	$854,114	159,426	$4,392,700	188,258	$12,721,420	146,362	$4,547,237
Chemical—										
Unbleached—										
Sulphate .....tons..Free	11,468	$1,573,809	28,407	$1,582,327	116,915	$8,243,274	148,879	$15,129,005	119,603	$8,832,730
Sulphite .....tons..Free	25,436	3,684,609	26,128	1,375,808	187,824	15,763,348	287,278	34,763,754	155,115	11,410,462
Total .....tons	36,904	$5,258,418	54,535	$2,958,135	304,739	$24,006,622	436,157	$49,892,759	274,718	$20,243,192
Imported from—										
Norway	300	$21,091	580	$26,674	5,563	$396,832	5,706	$883,173	2,271	$183,003
Sweden	10,486	1,701,939	21,574	1,061,451	56,072	5,165,523	101,716	12,139,238	82,688	5,393,290
Canada	21,314	2,893,016	26,419	1,610,180	228,359	17,103,289	303,708	33,580,063	154,026	11,724,431
Other countries.....	4,804	642,372	5,962	259,830	14,745	1,140,978	25,027	3,285,265	35,733	2,942,468
Bleached—										
Sulphate .....tons..Free	19	$2,750	----------	----------	4,011	$338,329	14,892	$1,884,977	2,331	$155,731
Sulphite .....tons..Free	12,856	2,491,362	9,045	$751,424	32,835	3,887,689	102,649	16,606,811	70,530	7,651,749
Total .....tons	12,875	$2,494,112	9,045	$751,424	36,846	$4,216,018	117,541	$18,491,788	72,861	$7,807,480
Imported from—										
Norway	1,050	$267,817	713	$54,686	4,455	$701,364	11,742	$2,141,338	8,271	$990,810
Sweden	710	107,833	574	36,058	3,723	428,063	10,817	1,520,392	5,886	504,236
Canada	10,331	1,982,940	7,429	640,129	27,690	2,986,567	84,234	13,210,426	48,062	5,045,245
Other countries.....	784	135,522	329	20,551	978	100,004	10,748	1,619,632	12,022	1,477,180

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.

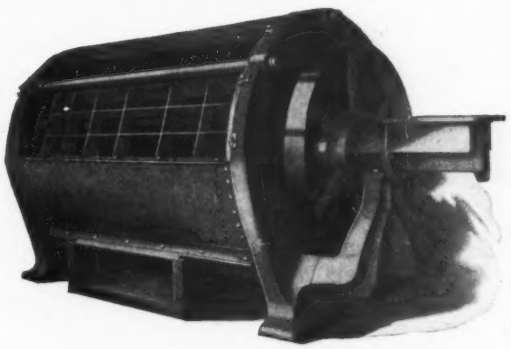
Colors or dyes, n.e.s.....lbs..Dut.	562,636	$1,063,295	199,487	$293,737	1,980,630	$2,864,135	3,248,400	$5,004,063	2,553,028	$3,943,158
Imported from—										
Germany	353,099	$699,092	47,758	$68,006	141,453	$82,643	1,092,107	$1,515,922	911,966	$1,400,152
Switzerland	109,421	260,165	131,872	202,708	1,136,189	1,945,695	1,340,744	2,626,839	1,423,390	1,871,326
United Kingdom.....	44,705	67,749	15,384	15,274	535,002	602,747	331,094	377,729	268,919	325,304
Other countries.....	55,411	36,289	4,473	7,749	167,986	233,050	484,455	483,573	248,753	341,376
Indigo—										
Natural .....lbs..Dut.	57,809	$155,603	4,402	$3,119	211,648	$280,217	152,204	$305,428	43,026	$74,980
Synthetic .....lbs..Dut.	15,928	8,215	13,154	14,821	756,342	407,340	712,000	443,981	71,283	106,471
Alizarin and alizarin dyes.....lbs..Dut.	36,844	27,149	26,238	33,563	16,811	20,271	400,366	313,629	347,804	449,677
Lactarene or Casein.....lbs..Free	893,466	102,854	176,302	11,682	14,247,687	1,692,251	20,109,107	2,304,483	8,980,389	796,340
Lime, Chlor. of, or bleaching powder, lbs..Dut.	904,824	44,256	1,278,265	18,538	529,001	7,925	1,795,466	60,921	10,440,415	195,633
Magnesite, not purified.....tons..Free	8,352	120,471	927	40,025	12,875	354,151	41,275	709,633	46,955	689,721
Potash, Hydrate of.....lbs..Free	98,324	20,286	1,639,147	55,838	484,290	134,166	1,654,002	435,612	9,454,579	435,541
Sulphur or Brimstone.....tons..Free	----------	----------	2	113	77	1,990	44	1,710	4	220
China clay or kaolin.....tons..Dut.	24,029	285,751	19,592	198,848	151,858	1,805,175	296,646	3,284,346	119,535	1,266,735

(*Continued on page* 36)

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low Power and Upkeep Expense



Delivers Rejections Free from Good Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING

WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. Nashua, N. H.

SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

WHALEN SULPHITE PULPS

Made from the SITKA SPRUCE of BRITISH COLUMBIA
Noted for Fibre, Color and Strength

SNOWHITE BLEACHED SULPHITE	GLACIER EASY BLEACHING SULPHITE	SWAN STRONG SULPHITE

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

CANADIAN ROBERT DOLLAR CO., Limited
VANCOUVER, B. C.

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Robert Dollar Co., Robert Dollar Bldg., San Francisco.
Robert Dollar Co., 15 Moore Street, New York, N. Y.
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.
Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.

FOREIGN OFFICES

Robert Dollar Co., Shanghai, Hong Kong, Hankow, Tientsin, Ichang, Chungking, and Pekin, China; Kobe, Japan; Calcutta, India; Manila, P. I.; Singapore, S. S.

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 34*)

PULP WOOD.

Paper and Manufactures of.	November 1920. Quantity.	November 1920. Value.	November 1921. Quantity.	November 1921. Value.	Eleven Months Ended November 30 1919. Quantity.	1919. Value.	1920. Quantity.	1920. Value.	1921. Quantity.	1921. Value.
Pulp Wood—										
Rough .....cords..Free	25,499	$339,855	7,033	$55,613	234,074	$2,255,172	234,560	$2,023,600	226,063	$2,998,249
Peeled .....cords..Free	78,628	1,175,333	32,126	375,324	664,454	6,452,685	696,845	8,840,609	713,065	10,379,361
Rossed .....cords..Free	24,508	474,984	5,677	78,591	99,763	1,280,211	139,416	2,544,998	82,472	1,474,716
Total.....cords	129,635	$1,990,172	44,835	$509,528	998,291	$9,988,068	1,070,830	$14,309,297	1,031,600	$14,852,326

EXPORTS—PAPER.

Bags	----------	$221,310	----------	$61,822	----------	$1,290,863	----------	$2,272,829	----------	$776,019
Books, Music, Maps, Engravings, Etchings, Photographs, and Other Printed Matter..	----------	2,252,939	----------	1,438,591	----------	16,534,845	----------	21,925,325	----------	19,515,511
Boxes and Cartons	----------	243,479	----------	105,845	----------	1,228,867	----------	2,039,407	----------	1,193,550
Carbon Paper	----------	96,586	----------	28,421	----------	917,798	----------	945,734	----------	451,012
Cash register and adding-machine paper	----------	30,451	----------	3,459	----------	129,846	----------	180,682	----------	147,276
Paper Board and Strawboard	----------	667,038	----------	123,240	----------	4,392,851	----------	4,820,334	----------	2,160,505
Paper Hangings	----------	54,200	----------	33,365	----------	817,644	----------	1,137,011	----------	566,940
Playing Cards	----------	194,830	----------	22,033	----------	1,390,520	----------	1,053,695	----------	568,533
Printing Paper—										
News Print.....lbs.	11,087,342	$708,095	2,512,854	$118,299	213,366,170	$9,708,009	85,197,558	$5,520,221	30,443,492	$2,018,639
Exported to—										
Canada	161,288	$12,848	8,689	870	701,594	$34,774	1,628,408	$130,516	473,122	$42,641
Cuba	1,722,123	124,491	1,683,921	69,273	17,913,311	821,755	14,162,093	911,974	15,636,655	947,751
Argentina	6,833,436	345,026	----------	----------	52,409,643	2,182,583	38,604,963	1,993,589	4,262,098	310,300
Brazil	338,819	28,465	----------	----------	30,840,904	1,379,118	3,746,702	265,061	233,236	21,335
Uruguay	70,893	3,545	----------	----------	6,164,806	273,756	2,258,877	121,887	756,697	55,210
Other South America	848,745	75,988	132,130	7,055	10,301,915	484,174	4,918,564	420,790	1,220,070	99,263
China	143,066	13,169	39,914	1,396	7,791,881	506,158	5,245,047	486,009	373,396	24,519
Australia	----------	----------	----------	----------	----------	----------	----------	----------	329,584	28,692
Philippine Islands	273,222	16,252	276,593	13,848	3,653,103	187,639	3,242,413	199,582	3,428,383	225,749
Other countries	695,750	88,311	371,607	25,857	83,589,013	3,838,052	11,390,491	990,793	3,730,251	263,179
All other.....lbs.	9,288,097	$1,581,487	1,130,205	$145,273	148,254,128	$15,587,343	83,150,704	$11,628,252	38,679,228	$5,731,416
Exported to—										
Greece	274,546	$25,896	----------	----------	----------	----------	1,289,323	$148,955	103,302	$14,361
United Kingdom	138,369	36,102	60,542	$11,029	2,158,715	$279,187	2,020,317	380,727	358,057	80,154
Canada	323,777	52,119	325,860	38,961	6,009,539	688,637	5,386,577	797,392	2,985,115	364,043
Mexico	93,939	18,536	231,709	29,491	4,165,040	392,653	1,507,586	224,082	3,628,725	518,778
Cuba	1,945,512	363,857	122,486	16,124	9,162,565	1,051,304	13,344,122	1,977,512	4,275,076	654,703
Argentina	1,169,218	188,676	638	132	28,497,509	2,943,229	13,637,756	1,729,642	5,665,490	803,580
Brazil	992,433	181,357	48,816	6,178	13,575,811	1,448,771	6,968,729	1,083,686	1,264,769	231,510
Chile	113,028	24,104	5,727	478	4,678,711	579,885	1,272,368	180,850	228,535	40,743
Colombia	----------	----------	11,449	1,376	----------	----------	----------	----------	636,833	106,742
Peru	22,552	4,072	1,578	166	1,215,281	148,218	652,067	90,112	1,036,419	164,511
Uruguay	466,042	75,604	----------	----------	3,081,648	331,731	2,001,408	286,471	639,545	67,293
Venezuela	----------	----------	57,113	6,141	----------	----------	----------	----------	577,013	87,594
China	409,097	69,293	49,167	8,026	8,946,588	861,842	5,527,088	725,561	3,030,907	520,721
British India	399,073	80,229	41,972	4,441	4,297,405	398,231	4,212,856	574,472	1,056,305	148,551
Dutch East Indies	----------	----------	----------	----------	----------	----------	----------	----------	339,238	60,238
Japan	192,474	31,660	5,230	1,760	20,675,601	2,286,690	6,579,335	792,881	1,878,200	197,592
Australia	347,170	50,248	15,079	1,789	22,520,528	2,149,757	4,503,328	587,377	4,582,981	604,353
Philippine Islands	1,095,527	147,129	61,597	6,151	5,255,402	591,142	3,270,651	433,221	2,973,811	508,439
Other countries	1,305,340	231,605	91,242	13,030	14,013,785	1,436,066	10,977,173	1,615,311	3,418,907	557,510
Tissue and Toilet Paper	----------	$194,687	----------	$58,745	----------	$1,879,277	----------	$2,463,221	----------	$832,778
Towels and Napkins	----------	49,822	----------	10,670	----------	165,783	----------	375,333	----------	166,294
Wax Paper	----------	54,618	----------	7,911	----------	530,017	----------	368,508	----------	123,572
Wrapping Paper.....lbs.	5,253,347	745,679	2,226,127	132,950	70,102,877	6,239,463	56,096,007	6,287,628	23,800,613	2,142,029
Writing Paper and Envelopes	----------	1,020,369	----------	162,828	----------	12,716,637	----------	7,590,975	----------	4,183,508
All other paper	----------	961,081	----------	504,151	----------	8,144,100	----------	9,825,841	----------	5,751,087
Total Paper and Manufactures of	----------	$9,076,671	----------	$2,957,603	----------	$81,773,863	----------	$78,434,996	----------	$46,328,669

WOOD PULP AND PAPER STOCK.

Paper stock.....lbs.	4,135,914	$111,500	5,765,764	$87,647	47,503,754	$1,324,837	80,944,036	$2,616,629	35,515,217	$664,447
Wood Pulp.....tons	3,934	509,244	1,954	95,737	22,580	2,809,049	26,566	2,671,688	23,106	1,621,117

MISCELLANEOUS ITEMS.

Rosin .....bbls.	71,752	$882,481	131,000	$635,725	1,134,926	$19,017,365	1,120,706	$18,959,773	858,631	$4,530,382
Exported to—										
Belgium	----------	----------	6,814	$28,979	----------	----------	----------	----------	24,736	$115,085
Germany	----------	----------	17,697	80,806	----------	----------	----------	----------	128,941	632,158
Italy	1,531	$20,880	5,605	24,145	18,470	$269,177	32,708	$594,505	14,699	73,891
Netherlands	1,739	20,504	626	2,696	24,385	394,456	11,287	158,321	11,725	55,400
Norway	6	118	1,475	6,115	6,731	104,604	12,570	211,929	1,707	7,484
Sweden	1,556	21,300	2,308	12,239	23,645	408,280	42,422	716,413	13,791	63,700
United Kingdom	39,790	473,713	32,404	159,747	500,740	8,465,190	283,783	4,064,773	167,398	882,979
Canada	2,614	32,971	7,941	40,248	63,407	1,105,555	99,312	1,708,500	64,365	397,915
Cuba	866	12,096	1,910	9,322	23,352	373,747	24,370	439,176	17,695	97,609
Argentina	5,964	70,580	15,181	70,422	110,176	1,776,513	136,345	2,272,741	142,963	687,904
Brazil	12,488	155,973	14,917	73,721	142,269	2,330,840	146,564	2,637,862	84,369	497,777
Uruguay	----------	----------	350	1,602	23,368	373,207	21,560	401,662	16,328	85,979
Dutch East Indies	1,490	20,753	----------	----------	22,792	385,461	41,163	819,153	35,556	199,442
Japan	----------	----------	9,805	44,797	80,977	1,472,780	92,207	1,761,612	62,160	294,261
Australia	981	14,992	6,799	38,184	12,226	180,697	53,185	1,035,411	20,674	135,493
Other countries	2,727	38,601	7,168	42,612	82,388	1,376,849	123,230	2,137,715	51,574	303,215
Sulphur or Brimstone.....tons	29,627	$489,531	25,322	$391,843	177,227	$5,093,715	458,306	$8,660,058	267,179	$4,232,751
Paper and Pulp Machinery	----------	435,094	----------	117,941	----------	3,612,740	----------	2,653,843	----------	2,575,094

GROUND WOOD
CHEMICAL PULPS

PERKINS-GOODWIN CO.
NEW YORK

PAPER

ALFRED LEEDS, President
KARL BECKER, Vice President

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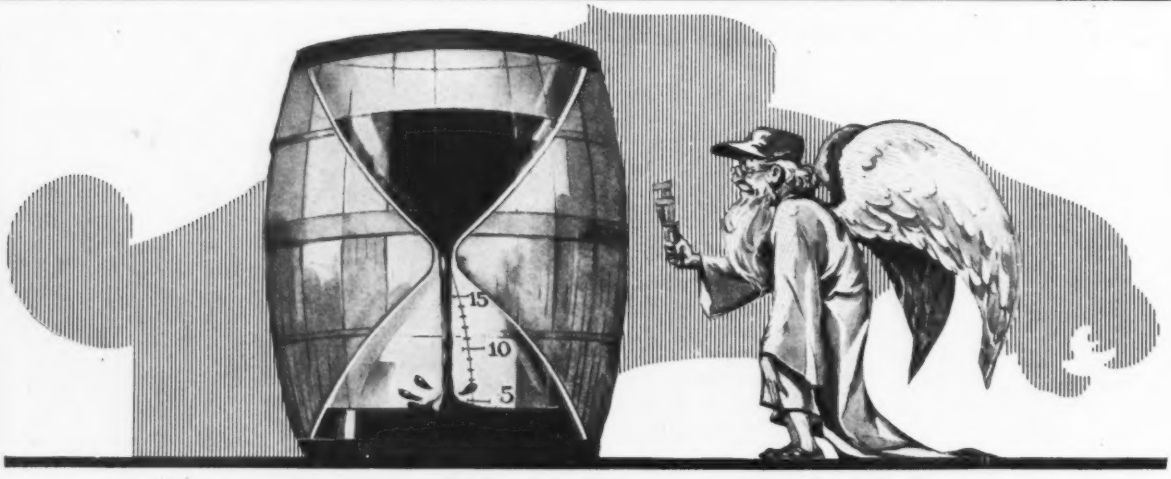

Long Life to Machinery!

The Help is in your Oil Barrel

IT has been estimated that on the average, engines and machines may be expected to give something like 15 years of useful service.

But:

Economically managed plants find that they can materially lengthen the life of their engines and machines.

How?

By correct lubrication. Correct lubrication alone minimizes friction, machinery's constant menace.

Here are a few of friction's more ominous symptoms.

1. Steam cylinders groan.
2. Valves chatter and stick.
3. Valve rods vibrate.
4. Cutting or scoring of cylinder surfaces, piston rods and valve rods takes place.
5. On bearings, friction shows itself in excessive heat.
6. Metal parts swell.

THE only way to prolong the life of machinery to its maximum is to reduce friction to its minimum—and only the correct oil can do that.

The mere fact that an oil "seems to work all right" is not sufficient. No careful manager of machinery should be satisfied with ordinary lubrication. His machinery deserves the best that is possible in lubrication.

The prescription of oil correct for any given engine or machine calls for oil knowledge and engineering experience of a high order.

VACUUM OIL COMPANY

If you wish to lengthen the productive years of your machinery and protect your profit through its unhindered operation, we suggest that you get in touch with our nearest branch.

Our lubricating recommendations are based upon manufacturing and engineering experience gained in more than 50 years of service to industry the world over. This service is open to all—from great industries operating internationally to small individual plants.

Stocks of Gargoyle Lubricating Oils correct for every engine and machine need are carried in principal cities throughout the country.

DOMESTIC BRANCHES:

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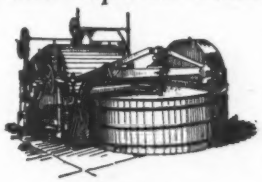
Lubricating Oils

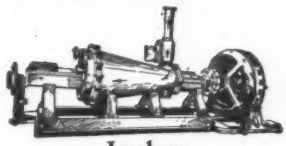
A grade for each type of service

CORRECT LUBRICATION
for these Important Machines



Beaters

Beater bearings, generally unnecessarily hot, will run cooler if the stock leakage is eliminated and oiling is regularly attended to. The regular use of **Gargoyle D. T. E. Oil Extra Heavy** overcomes beater lubrication difficulties.



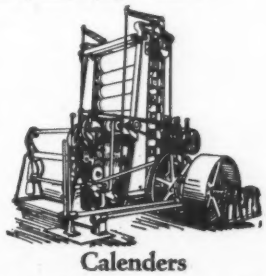
Jordans

Because of the high speeds and heavy pressures which are always present, and the side pull on bearings when belt driven, it is necessary to use a heavy bodied oil. For this purpose we recommend **Gargoyle Etna Oil Heavy Medium.**

Paper Machines

For bearings of the paper machine, subjected to induced heat from steam used for drying, an extra heavy bodied oil is required such as **Gargoyle D. T. E. Oil Extra Heavy.**

The rolls at the wet end subjected to moisture and heavy pressure demand a compounded oil which will resist the washing te.. 'ency and maintain a perfect oil film. We recommend **Gargoyle D. T. E. Oil Heavy X** for these specially trying conditions.



Calenders

Paper machine production is directly dependent upon uniform speed. Calender bearings are subjected to heavy pressures and high frictional heat. The regular application of Gargoyle D. T. E. Oil Extra Heavy insures uniform speed, and consequently minimizes "broke."

VACUUM OIL COMPANY

Editorial

Vol. LXXIV New York, January 19, 1922 No. 3

FIFTIETH YEAR

Forestry Bill Needed

The hearings that were conducted almost all of last week before the House Committee on Agriculture on the so-called Snell Forestry Bill were of a character that cannot fail to please all friends of this proposed measure.

Out of the many witnesses appearing before the committee, only three made any serious opposition. These three included, of course, Gifford Pinchot, former Chief Forester, who has opposed certain sections of the bill ever since it was introduced; John H. Kirby, president of the National Lumber Manufacturers' Association, who personally opposed the bill, but stated that his association favored it, and Dr. S. J. Pratt, of the Forestry Board of North Carolina, who opposed certain sections of the bill.

R. S. Kellogg, chairman of the National Forestry Program Committee, presented an especially strong argument for the measure. "Forest fires must be prevented and cut over lands reforested," said he. "We know today that if fires are prevented, many extensive areas will naturally reproduce the forest growth, but there are 81,000,000 acres of cut overland which need reforestation.

"The Snell bill proposes an appropriation for forest purposes far less than the annual loss by forest fires.

"The private owner cannot be forced to grow trees at a financial loss. He will grow trees if it can be done without this loss. This can be accomplished if such a measure as the Snell bill is passed which will make it safe and profitable for private capital to seek permanent investment in forest production.

"We can with some degree of confidence make the following general assumptions for pulpwood forest growing, for instance, over large areas:

"1. A cost of $15 per acre for land and the restocking of it with young trees.

"2. An annual protection charge of five cents per acre.

"3. Six per cent compound interest on the investment.

"4. We are justified in assuming that in the near future we are likely to have a cutting tax, instead of an annual tax upon private forest land, and we are fixing this high enough when we make it 16⅔ per cent upon the final yield, which is equivalent to an annual tax of 1 per cent upon actual value with a 6 per cent interest rate.

"5. We are also justified in assuming, under good conditions, a yield of 20 cords per acre at the end of forty years.

"Applying the usual formulas of forest finance, we get $10 per cord as the cost of growing this pulpwood stumpage, and we need have no hesitancy in saying that pulpwood stumpage will be worth more than $10 per cord long before it can be grown.

"The foresters can now demonstrate to hard-headed business men that in forestry and not in destructive logging lies the future of the great industry of paper making, and the paper industry already has many large companies which are practicing forestry. The same conditions in a broad way apply to the lumber industry as well."

Paper and pulp manufacturers are vitally concerned in this matter of reforestation and they should not allow their interest to wane until action that will adequately take care of the situation has been taken by Congress.

Better Market in February

While it is realized now that the hopefulness for a resumption of something approaching normal activity in the paper and pulp industry beginning early in the new year inspired by the improved demand in the fall, was not justified by the facts in the case, and while operations in the industry for some time will be along cautious lines the situation in the past few weeks has at least acquired a brighter aspect than it presented recently. In this connection the American Paper and Pulp Association advises its members that 1922 will see no startling demand, but that a renewal of business can be expected about February 1.

"With a total production of paper of about 5,300,000 tons for the year 1921, as compared with an actual production of 7,334,600 tons in 1920, the paper industry seems to face a certain increase in production during 1922, as compared with the year of depression just closed," says the bulletin of the association.

"Any estimate as to the total production of the year is of course impossible. It would seem certain, however, that the production for the coming year will run over the 6,000,000-ton figure, even though many branches of the industry will not be able to run their plants even close to capacity. The fact that a paper mill must run well up to capacity to make a return on the investment indicates that the year 1922 will be one in which the paper industry will be faced with serious problems.

"It is the consensus of opinion of various fine paper manufacturers that business for January will be rather poor throughout the month, because there will be a natural hesitancy to see just what values are going to obtain in the market. As soon as the market shows signs of stability, however, there will probably be a renewal of business which ought to come about the first of February and extend well into the summer.

"The mills, however, are not anticipating that for the year of 1922 they are going to have any startling demand. The tissue paper manufacturers figure that their business this year will be about 90 per cent., whereas the writing and cover paper manufacturers estimate that their business will be about 80 per cent., and the book paper mills that their business will be about 75 per cent."

Import Paper Prices

The import price of paper continued to show a decline for November, according to figures just furnished by the Department of Commerce at Washington.

The monthly average import price per pound of news print for November was $.0393 as compared with $.0405 for October and $.0569 for November a year ago.

The monthly average import price of pulpwood also declined considerably, the price per cord for November being $11.36 as compared with $12.30 for October and $15.36 for November a year ago.

The average import price of groundwood for November again showed some increase, the price per ton for November being $26.94

as compared with $25.98 for October and $77.50 for November a year ago.

The average import price of bleached chemical pulp also increased, the price per ton for November being $54.25 as compared with $53.64 for October and $142.50 for November a year ago.

The average import price of bleached chemical pulp increased considerably, the price per ton for November being $83.08 as compared with $76.77 for October and $193.70 for November a year ago.

The average export price of news print also declined, the price per pound for November being $.033 as compared with $.038 for October and $.064 for November of last year.

The monthly average export price per ton of wood pulp for November was $49.00 as compared with $51.35 for October and $129.50 for November.

I. P. Income $1,336,866 in Eleven Months

Statement filed by International Paper Company for eleven months ended November 30, 1921, with New York Stock Exchange shows total income of $1,336,866. After providing for interest and depreciation of mill plants and setting up a reserve of $6,000,000 for inventory depreciation for 1921, the net loss was $6,754,310; and after payment of preferred dividends the deficit was $7,879,310. Profit and loss surplus on November 30, 1921, were $24,183,309.

For the year 1920 company reported net income, after interest, depreciation and Federal taxes, of $11,836,362, equivalent, after preferred dividends, to $52.07 a share earned on the common stock.

General profit and loss statement for eleven months ended November 30, 1921, follows:

Net operating revenue	$699,498
Other income	637,368
Total income	$1,336,866
Depreciation mill plants	1,795,000
Interest	296,176
Reserve inventories depr., 1921	6,000,000
Net loss	$6,754,310
Preferred dividends	1,125,000
Deficit	$7,879,310
Surplus previous	32,062,619
P. & L. surplus Nov. 30, 1921	$24,183,309

General balance sheet of International Paper Company, as of November 30, 1921, shows as follows:

Assets: Mill, plants and water powers, $38,009,721; woodlands, $1,856,509; securities, $10,895,864; advances to subsidiary companies, $13,039,583; cash, $1,030,391; notes receivable, $246,474; accounts receivable, $3,922,530; inventories, $30,179,152; sinking fund, $1,140; deferred assets, $119,742; total, $99,301,107.

Liabilities: Preferred stock, $24,883,058; common stock, $19,899,764; funded debt, $6,395,000; accounts payable, $2,883,616; notes payable, $13,291,687; Federal tax reserve, $1,101,248; reserve for payment of preferred dividends, $279,826; insurance reserve, $693,613; contingency reserve, $5,689,987; surplus, $24,183,309; total, $99,309,107.

Embargo on German Pulp

News of a German embargo on paper pulp has lately been received by New York importers. It is understood that orders placed prior to December 21, 1921, will be filled in good faith but that those received thereafter will not be filled. The act affects all pulp but is aimed primarily at the unbleached grades and may be raised from the other commodities at any time.

Previous to the enactment of the embargo the German government had been carefully checking pulp exports by means of export permits which could be obtained readily provided that guarantee was had from the buyers that a higher price would be received for the consignment than was effective in Berlin. The difference in the American and German selling prices was handed over to the government to assist in reparation payments.

The embargo was brought about by the concerted action of the press, long harassed by the grave shortage in news print, in bringing pressure to bear upon the government through public opinion. Paper conditions in Germany have been bad and still are far from satisfactory. Newspapers and periodicals have had only enough news print on hand for a day in advance and have been living in a true hand to mouth style. The Berlin dailies have been compelled to reduce the size of their publications and discontinuance altogether was threatened in many cases.

The great scarcity caused necessarily high prices and public sentiment waxed indignant against those interests responsible for the deplorable state of affairs.

Paper Making Shown on the Screen

Public interest in the paper industry has developed wonderfully in the past two years.

There is a demand from all directions for films to show the industry in action.

Films now available through the co-operation of individual company owners with the information service of the American Paper and Pulp Association are as follows:

"From Spruce to News Print" (8 reels)—G. H. Mead Company, Dayton, Ohio.

"From Spruce to News Print" (2 reels)—G. H. Mead Company, Dayton, Ohio.

"Making News Print Paper From the Forest to the Reading Public" (3 reels)—International Paper Company, New York.

"Making Paper" (2 reels)—Writing Paper Manufacturers' Association, New York.

"Operations of Price Bros. & Co., Ltd." (2 reels)—Price Bros. & Co., Ltd., Quebec, Canada (available in Canada only).

"Making of Crepe Paper" (1 reel)—Bureau of Commercial Economics, Washington, D. C.

"Paper Industry" (2 reels)—Bureau of Commercial Economics, Washington, D. C. (cardboard and boxes).

"Thirsty Fibre" (2 reels)—Scott Paper Company, Chester, Pa.

"Safety Picnic" (1 reel)—Nekoosa-Edwards Paper Company, Port Edwards, Wis.

TROY PAPER CORPORATION, Troy, New York. Printers' supplies. Capital, $150,000. Incorporators: G. W. Van Alstyne, D. H. Burton; attorney, O. Stevens, Albany.

Swedish News Print Prices for 1922

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 18, 1922.—American Consul Walter H. Sholes, of Goteborg, has sent the following report to the Department of Commerce regarding Swedish news print prices for 1922:

"The Swedish Paper Mills Association has announced that its 1922 prices for news print paper at the mill to Swedish newspaper publishers will be 0.28 crown ($0.067 at rate of exchange quoted; 4.28 crowns to the dollar) per kilo (2.2 pounds). Heretofore news print manufacturers fixed prices only for six months in advance. The new arrangement, therefore, represents a distinct departure from former practices.

"Swedish newspaper publishers are now paying from 0.43 to 0.47 crown per kilo ($0.10 to $0.11 at the present rate of exchange), while American publishers are paying about $0.03 per pound for the same paper."

LAWRENCE GROCERS' BAGS

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St. Regis Paper Company
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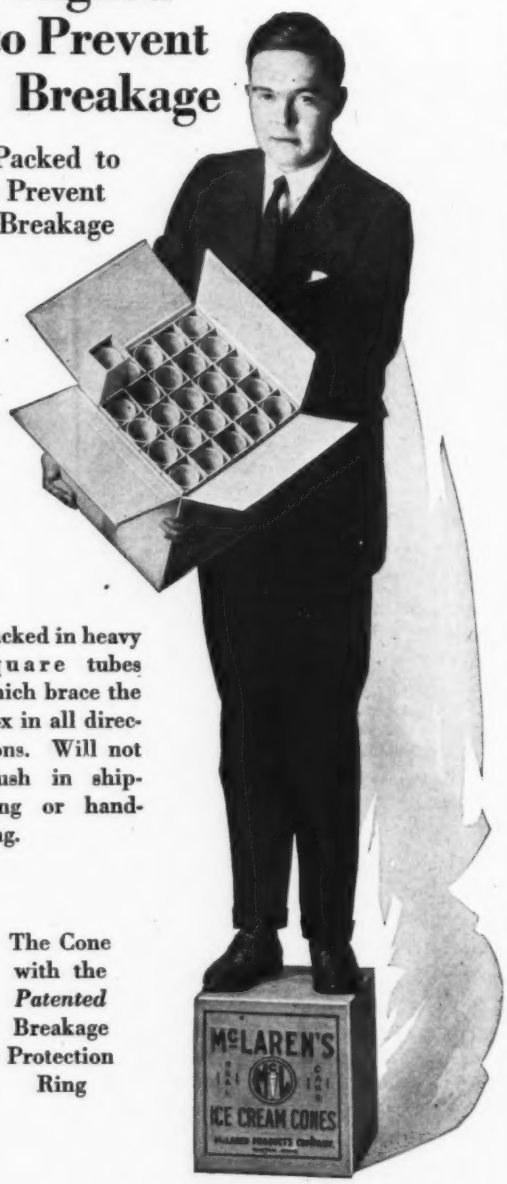

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

A SIMPLE AND PRACTICAL METHOD FOR MEASURING WATER-RESISTANCE OF FIBER BOARD AND WRAPPING PAPERS

By E. O. Reed, Assistant Chemist, Bureau of Chemistry, Washington, D. C.

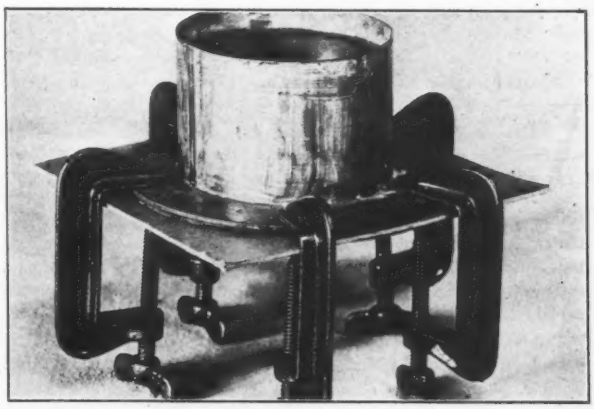
There has long been need for a test which will indicate the probable water-resistance in service of paper, tag and fiber board, such as wrapping and baling papers, roofing papers, container board, and cardboard for outdoor posters. This need was particularly urgent during the war when it became necessary to devise a simple and reliable method for this purpose.

The best procedure appeared to be the determination of the ratio of the bursting strength of the wet paper to the bursting strength of the dry paper, and to this and the loss in bursting strength after exposure to a column of water of a definite height for a stated length of time was determined by use of the Mullen tester. Considerable practical experience with the test, which has been in use in the Bureau of Chemistry since 1915, has shown it to be very useful in indicating, in terms of residual serviceability, the water-resistance of fiber board and wrapping papers. In fact, no other procedure that yields as much information on this point is known.

Apparatus and Procedure

The apparatus for making the test, which is very simple, consists of two steel rings or washers, ⅛-inch thick, 5½ inches in diameter, with an inside diameter of 4 inches, to one of which is soldered a cylinder of galvanized iron 4 inches in diameter and 3½ inches or 4 inches in length. The sample of fiber board or paper to be tested, cut 6 inches square, is tightly clamped, using 4 or 5 quilting clamps or small cabinetmaker's clamps, between these two rings with soft rubber gaskets on each side of the sample. The cup is then filled to a height of 3 inches with water (preferably distilled water), at 70° F. Care must be taken that no water leaks through the upper gasket, thus permitting water to run over the edges of the sample. The material to be tested may be exposed for any length of time, preferably in a room of approximately 70° F., water being added from time to time to replace that lost by evaporation.

In determining whether water visibly penetrates through the board or paper, an exposure of from 12 to 24 hours is usually ample, although in certain cases exposures for a period of 10 days have been made. For determining the loss in bursting strength upon exposure to water, an exposure of 3 hours for wrapping papers and of 6 hours for fiber board and cardboard has been adopted. After exposure for the required length of time, the sample is removed from the tester, the excess of water removed from the surface with blotting paper or a towel, and the sample, with the side which was in contact with the water up, immediately tested in the Mullen tester. From the average of at least five such tests and the average bursting strength before exposure the percentage loss in bursting strength due to the exposure is then calculated.



Apparatus for Exposing Fiber Board to Water

The table I shows the results of tests for water-resistance, using the described method, on fiber container board, individual plies for fiber container board before pasting, waterproofed wrapping papers and tag boards. It is evident that certain samples of board which show a high bursting strength dry may be extremely weak after exposure to water. The tests also show that there are wide differences in the water-resistance of paper and fiber board manufactured for the same uses.

Furthermore, by means of this method valuable information as to the water-resistant effects of various sizings, adhesives, etc., used in building up fiber board, may be secured.

It is believed that this simple procedure for determining water-resistance will be of real service to makers and users of fiber board and wrapping paper, especially to those who ship goods that would be damaged by getting wet. With this test for water-resistance, the impact tester and the two other testers now generally employed in testing box board and fiber boxes, it is possible for makers, shippers and transportation companies to prepare specifications for fiber boxes for any desired service.

WATER RESISTANCE TESTS OF VARIOUS TYPES OF PAPER AND FIBER BOARD

L. & P.	Description	Weight Per 1,000 Sq. Ft. Lbs.	Thickness, 1/1000 Inch	Bursting Strength: Dry Av. Pts.	Bursting Strength: After Exposure to 3 In. Water 6 Hours Av. Pts.	Percentage Loss in Bursting Strength After Exposure 3 In. Water 6 Hrs. Per Cent	Remarks
Plied Fiber Container Board:							
34496	80-point solid fiber board	334	83	326	27.0	92	Completely wet through.
34500	80-point solid fiber board	331	87	246	131.0	47	Not wet through.
34622	80-point solid fiber board	327	87	210	35.0	83	Completely wet through.
35306	80-point solid fiber board	327	84	280	175.0	38	Not wet through.
35315	80-point solid fiber board	290	80	216	18.0	92	Completely wet through.
36649*	100-point solid fiber board	393	100	354	260.0	26	Not wet through.
36650	100-point solid fiber board	379	96	356	259.0	27	Not wet through.
35321	80-point solid fiber board	329	86	265	170.0	36	Not wet through.
35305	100-point solid fiber board	384	96	284	220.0	23	Not wet through.
34636	100-point solid fiber board	419	104	352	274.0	22	Not wet through.
Individual Plies for Container Board:							
34512	Fiber liner—specially waterproofed—treated with spar varnish solution	...	...	82	76.0	7	Not wet through.
35354	Oyster pail stock-patent waterproof-size	...	...	74	43.0	42	Not wet through.
35353	Wall board stock-patent waterproof-size	...	...	66	47.0	29	Not wet through.
34186	30-point fiber liner	88	36	152	103.0	32	Not wet through.
34157	23-point fiber liner	73	25	121	16.0	87	Wet through.
34179	18-point fiber liner	55	21	108	59.0	45	Through in spots.
34161	16-point fiber liner	50	16	112	7.0	94	Wet through.
34181	16-point fiber liner	55	19	109	55.0	50	Through in few spots.
36670	Chip liner	...	...	67	5.0	93	Wet through in 10 mins.
Waterproof Wrapping and Baling Paper:		Ream, 24x36—480			3 In. Water, 3 Hrs.	3 In. Water, 3 Hrs.	
36407	Kraft wrapping	60	...	64	10.0	84	Dampened through.
35539	Paraffin impregnated 60-lb. Kraft	85	...	68	9.0	87	Dampened through.
35191	120-lb. Kraft and 10-lb. tissue asphalt duplexed	156	...	140.5	141.0	0	Not wet or dampened through.
35065	30-lb. Kraft duplexed with asphalt	86	...	70.0	35.5	49	Not wet or dampened through.
35050	60-lb. Kraft duplexed with asphalt	141	...	149.5	79.5	47	Not wet or dampened through.
35138	60-lb. Kraft duplexed with asphalt and one sheet impregnated with asphalt	192	...	175.0	147.0	16	Not wet or dampened through.
Tag Board for Outdoor Posters:		Ream, 22½x28½—500	Stock: Jute of Manila	Stock: Sulphite	Dry Av., Pts.	3 In. Water, 3 Hrs.	3 In. Water, 3 Hrs.	
39248	Surface inked and both sides varnished	147	80	20	147.0	14.0	90½	Wet through.
39248	Surface inked and both sides varnished	147	80	20	147.0	142.0	Practically no loss	No indication of wetting.
39270	Surface inked and both sides varnished	123	40	60	162.0	76.5	53	Not wet through.
39250	Surface inked and both sides varnished	167	...	100	173.0	104.0	40	Not wet through.

All physical tests made at 70° F. and 65 per cent relative humidity.
*This sample of container board pasted with corn-cob adhesive; all other samples pasted with silicate of soda.

Shorter Pulp Cooking Method Advocated

The Forest Products Laboratory has patented and dedicated to the public the idea of impregnating wood pulp chips with the cooking liquor before the commencement of the cooking operation, in order to obtain stronger and more uniformly cooked pulps in shorter cooking periods.

Trials on a commercial scale in a southern sulphate pulp mill have been made, and it has been found that the process is entirely feasible.

In the mill trials the amount of steam used in cooking a digester charge yielding 3 tons of pulp was reduced from an average of 9,000 pounds to an average of 6,000 pounds. The density of the black liquor at the end of the cooking period was raised from 16 to 18½ degrees Beaumé. Only one hour was required to bring the digester to an operating pressure of 90 pounds per square inch, while with the standard mill cooks 2 hours was the usual period for this operation. It was possible, therefore, to carry out the impregnation and bring the digester to pressure as quickly as the digester could be brought to pressure by the old process. The time at pressure could be reduced from 4½ to 3½ hours, thus actually decreasing the time of the cooking cycle.

The mill trials, which were made during 1918, were interrupted owing to the pressure of work under way at the Laboratory in co-operation with the War Department. Since that time there has been no opportunity to complete the demonstration either in the same or other mills.

To obtain the fullest benefit from the process it is necessary to adapt it to the local conditions of each mill. This requires thorough chemical engineering supervision over a period long enough to solve local problems.

In 1920, 25 sulphate mills made 188,651 tons, and 31 soda mills 463,305 tons of pulp, representing a total value of $66,997,134. These mills were distributed over 21 states. One man's time could be profitably employed for a year or more in making contact with these mills, conducting demonstrations and assisting in placing the improvements on a firm scientific and economic basis. To finance a campaign for "selling" the idea to the mills will require at least $10,000. To fail to provide this fund means to waste a large proportion of the funds already spent on this development by the Laboratory.

A saving on fuel alone from the introduction of this modification of the process at the rate of 1,000 pounds of steam per ton of pulp, and coal at $6.00 per ton, would amount to $280,000 for the year. Besides this, there would be a saving of chemicals, a decrease in the cost of evaporating the black liquor, and an increase in the value of the products obtained. The $10,000 needed to carry these results to the industry represents less than 5 per cent of the possible saving to the industry and does not seem an unreasonable amount in order to save over a quarter of a million dollars.

PUMPS AND PUMPING MACHINERY

(*Continued from last week.*)

In order to assist the Joint International Committee on Text Books both financially and in attracting criticism of certain sections, the PAPER TRADE JOURNAL *has arranged to co-operate with the committee by publishing some of the material submitted to the editor of the text books. In presenting this series of articles to our readers a cordial invitation is extended to assist the committee by suggestions and criticisms of this material. It is hoped that in this way omissions and errors will be noticed and corrected.*

Description, Etc., of the Indicator

Before proceeding to describe other types than steam pumps, we should explain the indicator, an instrument which is connected to one or both ends of the steam cylinder by means of tapped openings.

The instrument consists of a cylindrical drum to which the chart paper is attached and held in place by clips; the drum is revolved by means of a cord, one end of which is attached to the drum and the other end is attached to the crosshead or other moving part of the machine under test. The drum carrying the paper thus revolves back and forth following the motion of the steam piston but in a much reduced scale.

The indicator is also equipped with a cylinder into which the steam from the engine cylinder is introduced through the threaded connection and stop cock which is placed between the engine cylinder and the indicator cylinder so that the steam may be admitted to the indicator cylinder or shut off at will. The indicator cylinder is fitted with a piston which usually has an area of one-half of one square inch; this piston is held in position by a spring of tested and known strength and the steam pressure on the side of the indicator piston opposite to the spring compresses the spring which in turn is attached to a system of levers on which is mounted the pencil which registers the pressure within the engine cylinder as shown by the compression of the spring with the indicator cylinder.

A standard American Thompson indicator is shown by Fig. 14.

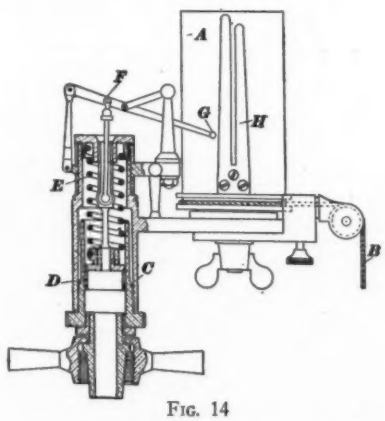


FIG. 14

Referring to these figures A is the drum which carries the paper on which the "indicator card" is registered and which is controlled by the connection of cord and hook B to the moving part, of the engine. C is the indicator cylinder. D is the indicator piston, and E is the spring. F is the system of levers attached to the indicator piston which carries the registering pencil at G; H shown the clips on the drum which hold the paper in place while the diagram is being registered.

By using the indicator the engineer can determine the steam pressure at all points in the stroke of the engine and the mean effective pressure (M.E.P.) from which the actual indicated horse power (I.H.P.), of the engine is determined.

In order to calculate the (I.H.P.) it is necessary that the diameter of the steam piston and the length of stroke or travel of piston should be known or measured.

In the case of direct acting steam pumps whose nominal length of stroke is likely to vary it is desirable that the actual length of stroke should be measured at the same time that the indicator cards are taken. This will insure more accurate calculation for I.H.P. of direct acting steam pumps and can easily be measured by placing a rule opposite a point fixed on the piston rod between the steam and water cylinders and observing the length of travel; in the case of a duplex pump the travel of both sides should be measured.

In addition to his ability to determine the I.H.P. and M.E.P. of his machine the engineer can also show by means of the indicator card the drop in steam pressure between the boiler and the cylinder leaking piston, leaking valve; improperly set valve; power demanded by full load; power wasted at light load; cost of running idle; loss of pressure resulting from improper piping between the boiler and engine and loss of power due to back pressure resulting from improper exhaust piping.

The indicator should be provided with suitable spring of the proper strength for registering the pressures to be dealt with at the plant and with several springs of different strength if different initial pressures are used or if cards are to be taken from high and low pressure cylinders of compound engines.

These springs are designed for and tested to pressures of various initial pressures used in regular practice.

The usual size of the diagram or indicator card is 2″ high and 4″ long and the springs are rated and marked to give a pressure per square inch according to their rating when the pencil arm is raised one inch; for instance, a spring which is stamped 50 makes a card one inch high for each 50 pounds of steam per square inch at the engine cylinder.

In order to make a proper selection of an indicator spring the operator should divide the boiler gauge pressure by 2 remembering that the indicator diagram will be approximately 2″ high, and in order to determine what steam pressure a spring is good for multiply the scale of spring, (or number stamped upon it), by 2½, which gives sufficient margin of safety. From this product subtract 15 which represents the atmospheric pressure and the remainder represents the maximum initial pressure for which the spring should be used. This rule should never be exceeded.

Example:—What spring should be selected for an engine running under 100 pounds boiler pressure?

$100 \div 2 = 50 =$ spring for a card 2″ high.

What is the maximum pressure that should be allowed for a No. 50 spring to work under?

$50 \times 2\frac{1}{2} = 125 - 15 = 110$ pounds.

When the indicator cards are taken the following record should be made as a part of the testing data number, size and any other information for identification of the machine being tested.

Cylinder diameter and length of stroke in inches; name and end of cylinder from which the indicator card is made, (such as high pressure, low pressure at boiler; right or left hand, head end or rod end).

Number of spring; number of revolutions or strokes per minute; gauge pressure at boiler; and reading of vacuum gauge if testing a condensing engine.

The direct acting steam pump which takes steam at or near full boiler pressure throughout its entire stroke will show an indicator card for each stroke as shown by Fig. 15.

It will be noted that the diagram of pressure represents a rectangle which fills the card, with the exception of a small rounded

corner at the left hand side, which shows the compression due to cushioning steam at the end of the stroke to prevent slamming as the steam piston works up close the cylinder heads. A card showing the opposite stroke would have the lower right hand corner rounded in a similar way and when the engine is working properly both cards should be of similar shape; the one for the piston will be slightly smaller due to the diminished area of the piston due to the piston rod.

The method of calculating the indicated horsepower (I.H.P.) after the card is taken is as follows:

Divide the card into ten equal spaces vertically as shown by

Fig. 15 Fig. 16 Fig. 17

Fig. 16 and more fully explained in Applied Mathematics, Art. 101.

The distance from the lower line to the upper line of card is measured through the middle of each of these spaces. The length of these lines are added (in inches) and multiplied by the scale of spring used in indicator when making the card. This product is then divided by 10 (or the number of spaces used), and the product is the mean effective pressure, (M.E.P.) throughout the stroke of the steam cylinder.

The indicated horse power then is determined by the following formula:

$$\frac{A \times PS \times MEP}{33{,}000} = \text{I.H.P.}$$

In which:—

A = Area of steam piston in square inches.

PS = Piston Speed or travel in feet per minute.

MEP = Mean effective pressure determined from the indicator card.

33,000 = Foot pounds represented by one horse power.

Example:—

We have a single cylinder direct acting pump with a steam piston 10" diameter, from which an indicator card has been taken with a No. 40 spring. The pump has a stroke of 12" and during the test it was running 60 strokes per minute.

The indicator card taken shows measurements taken vertically in the middle of the 10 spaces as described above which measure as follows:—

1¾"; 1⅞"; 2"; 2"; 2"; 2"; 2"; 2"; 2"; 1⅞"; which added together equal 19½", or in decimals:

$$\frac{19.5 \times 40}{10} = 78 \text{ pounds per square inch M.E.P.}$$

The area of the piston 10" diameter = 78.5 square inches.

The piston speed or travel equals:—

$$\frac{12" \times 60}{12} \text{ stroke} = 60 \text{ feet per minute.}$$

Then we have:—

$$\frac{78.5 \times 78 \times 60}{33{,}000} = 11.1 \text{ indicated Horse Power (I.H.P.).}$$

For close calculation of the I.H.P. the area of the piston rod should be deducted from the area of the piston before figuring the horse power for a steam cylinder having a rod passing through one head only, deduct one-half the area of the rod from the area of the piston but if the rod passes through both heads of the cylinder deduct the entire area of the rod from the area of the piston.

Crank and flywheel pumping engines and some direct acting engines steam expansively; that is, the steam is permitted to enter the engine cylinder at or near boiler pressure for only a part of the stroke, from the beginning of each stroke to a point varying up to approximately ¾ of the full stroke depending upon the load to be carried the steam valve is then closed by its operating mechanism and the steam already within the cylinder must expand into larger volume and lower pressure as the piston moves towards the end of its stroke.

The use of steam expansively requires a radically different construction of the moving element of steam cylinder and results in a greater economy of steam than when the steam is permitted to follow the piston at full pressure throughout the entire length of the stroke.

The card taken from a steam cylinder with a cut-off is of very different appearance than those shown above and a conventional card from such an engine would appear like Fig. 17.

This card shows the result of the cut-off by the long upper curve called the "expansion line," it will be noticed that the pressure line is constant for about one-third of the entire length of the card which means that boiler or initial pressure was admitted to the cylinder for one-third of the stroke when the steam valve closed and the steam already within the cylinder expanded during the balance of the stroke.

It will also be noticed that the rounded cushioning compression is shown at lower left hand as in the first card illustrated.

In calculating the M.E.P. from a card of this type precisely the same method should be used as in the former case, measuring the vertical distances midway between the spaces from the lower to the upper lines on the diagram.

The use of the indicator is urged on all operating Engineers as the most effective and satisfactory method of knowing to a certainty just what a steam power or pumping engine is accomplishing and as a sure "X-ray diagnosis" for any troubles which are not evident from the outside of the machine. A careful study of the use and care of the indicator is advised, together with the clear and extensive instructions provided with the instrument. There are several good standard works on the Indicator, and the student is recommended to consult one or more of these for a fuller description of the uses of this instrument.

CHAPTER V

Power Plunger and Piston Pump

The usual form is the familiar vertical single acting triplex pump.

The same construction is also used in single and duplex or two cylinder types but the even discharge flow from the triplex pump has developed this pump into a universally standard machine.

Double acting pumps in the vertical type are also built occasionally but the difficulty in properly adjusting the packings of these pumps has prevented them from becoming popular.

The same arrangements of working parts and cylinders are also found in horizontal pumps and here the double acting single and double cylinder types are most common as the difficulty found in packing the double acting vertical pump entirely disappears when applied to the horizontal design.

The principal advantages found in the power pump of this general design is its adaptability to moderate speed drives, positive action and high efficiency under moderate and high pressure service, and these pumps, usually the standard adopted in paper mills for the transfer of heavy stock, are equipped with ball or other form of liquid valve ports.

With the single and duplex horizontal power pump it is customary for manufacturers of a general line of pumping machinery to utilize the same design of water cylinders for these pumps as are used in the construction of single cylinder and duplex steam pumps and they are usually well adapted for power pump service,

the construction of these with the conventional water cylinder and piston or plunger and water valve equipment consists of the cross-head, connecting rod and crankshaft, mounted in suitable bearings and rotating at right angles to the piston rod with a strongly built frame connecting the water cylinder with the bearings.

All of these pumps can be arranged for left driving either at the same speed as the crankshaft or with intermediate gearing between the crankshaft and the pulley shaft which gives an increased R.P.M. to the pulley shaft usually with ratios of from 3 to 1 to as high as 6 to 1 or more, thus the pump pulley is operated at speed very suitable for driving from moderate speed motors, steam engines, gas engine line shafts or other suitable drives.

Other standard forms of drives for power pumps are direct gearing, either with single or double sets of gears as may be required to cover the range of R.P.M. between the crank shaft of the pump and the R.P.M. of the driver silent chain drives direct from the drive to the crankshaft or with intermediate gears when required.

When operated by gas engines or any type of driver which must be brought up to its full speed without load, a friction clutch is mounted between the shaft of the driver and the pump shaft so that the engines may be started up light and the pump load connected to the pump shaft by throwing the friction clutch into gear as soon as the engine is running at its normal speed and has gained sufficient momentum to carry the load imposed on it by the pump.

The theory and operation of the power pump water end is identical with that of the crank and flywheel type of steam pump; the calculation for capacity of the single acting type being based on the displacement of the piston or plunger for one stroke and then multiplied by the R.P.M. as the single acting pump makes one stroke in each revolution by the number of pistons or plungers in the pump; thus:—

$$\frac{A \times S \times R.P.M. \times N.}{231} = \text{Gallons per minute.}$$

A = Area of one plunger in square inches.
S = Length of stroke in inches.
R.P.M. = Revolutions per minute.
N. = Number of pistons or plungers in the pump.
231 = Cubic inches contained in one U. S. gallon.

Example:—

An 8" x 8" Triplex single acting pump whose crankshaft is operating at 50 R.P.M.

3—Plungers—8" diameter.

Each plunger has 50 square inches area.

Length of stroke 8".

Therefore: $\frac{50 \times 8 \times 50 \times 3}{231} = 259.7$ G.P.M.

As explained under chapter on steam pumps, this is the theoretical capacity based on displacement of the pistons or plungers. The actual capacity is somewhat less than this due to water slip and this is largely influenced by the condition of the pump valves and packings.

The usual arrangement of the cranks and working parts of the single acting triplex pump is such that the crank pins are located 120° apart and thus equally spaced within 360° of their path of travel.

This arrangement permits of a very even flow from the discharge valves as the discharge strokes of two of the plungers always overlap each other there is no appreciable pulsation or lessening of the flow of water from the pump.

The gear of power pumps which are referred to above represent the difference in speed in R.P.M. of the crank shaft which is connected to the plungers and the driving shaft to which it is geared also in R.P.M.

Taking the example of the 8 x 8 triplex pump just mentioned and assuming that a gear of 5 to 1 is used this would mean that the crank shaft and plunger speed of 50 R.P.M. × 5 = 250 R.P.M. which is the speed of the engine or countershaft driving the pump.

But in the case of power pumps which are geared to motors, on account of the large ratio between the R.P.M. of the crankshaft and the R.P.M. of standard motors it is often impracticable to cover the difference in speeds with one set of gears. It is customary in such cases to use two pairs of gears to accomplish this purpose and this form of drive is called a double gear reduction.

Taking again the same 8 x 8 triplex pump at its original speed of 50 R.P.M. and assume that we wish to gear drive the pump from a motor operating at 1,500 R.P.M., with a single reduction of gears this would mean

$\frac{1,500}{50}$ = to 1 ratio which is an impracticable gear ratio for ordinary gear construction. If taken in two steps or so-called double reduction it is made as follows:—

1st: Reduction between pump crank shaft and countershaft as before = 5 to 1 ratio, therefore the first reduction is represented by 50 R.P.M. × 5 = 250 R.P.M. of countershaft.

$\frac{1,500 \text{ R.P.M. of motor}}{250 \text{ R.P.M. of countershaft}}$ = 6 to 1 ratio for second reduction.

Fig. 18 shows a power pump arranged with one set or single reduction of gears and suitable for driving by pulley from a countershaft.

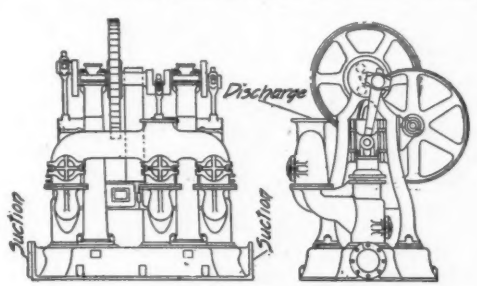


FIG. 18

The efficiency or ratio of useful work done for the power delivered averages quite high in pumps of this type and for single acting vertical triplex plunger pumps the efficiencies may be taken as below for pumps handling clean fresh water:—

Capacity G. P. M.	Total Heads in Feet 50	100	150	200	300 and upwards	
10	30	40	40	45	50	Efficiency in per cent
20	45	55	65	70	75	
30 to 100	55	65	70	75	80	
150 to 250	60	70	75	80	80	
300 and above	65	75	80	85	85	

Power pumps with packed pistons may be considered as having efficiencies approximately 5 per cent less than given in this table on account of the greater packing friction and pumps handling pulp or other heavy and thick liquids will have somewhat lower efficiencies on account of the increased friction of the liquid passing through the valves and passages of the pump.

The efficiencies are represented as follows:—

$$\frac{G.P.M. \times W \times H}{33,000 \times E} = \text{Brake H.P. required.}$$

G.P.M. = Gallons per minute to be pumped.
W = Weight of one gallon of the liquid in pounds.
H = Total head in feet, including suction lift, if any, and pipe friction.

(*Continued on page 52*)

ELECTRIC STEAM BOILERS*

G. A. MAILLET, DIRECTOR OF THE ETABLISSEMENTS RÉGIS-JOYA, GRENOBLE, FRANCE.

For some time back there has been talk in the technical journals of using electricity as a source of heat in steam boilers, and much has been said of the numerous advantages of this new application of the electric current. It goes without saying that only cheap hydro-electric power could be used for this purpose. It is well known by those familiar with hydro-electric power stations that a considerable amount of power is lost, which could not be utilized otherwise than for heating steam boilers, as such apparatus is best adapted to very large and sudden fluctuations in the power delivered.

Electrically heated boilers are extremely interesting for a number of reasons. First of all, the initial cost is very low, and if they are operated on current which would otherwise be lost the saving thus effected will pay for the whole installation in a very short time. Firemen are completely eliminated, the operation of the boilers is much safer than with coal-fired boilers, the cost of upkeep is negligible, and there is no smoke nuisance to contend with; these all constitute important advantages of the system. And, last but not least, they effect a very appreciable reduction in the consumption of coal.

Numerous tests have shown that it takes about 2 to 5 kilowatt hours to evaporate the same amount of water as 1 kilo of coal, according to the quality of the coal and the efficiency with which it is burned. As a rule, 3.5 kilowatt hours may be taken as the equivalent of 1 kilo of coal. For any given cost of coal it is easy to calculate at what price it becomes economical to heat boilers electrically. But it should not be forgotten that there are many advantages to electric boilers which it is very difficult to estimate in terms of money value and in consequence of which the electric boiler is to the coal-fired boiler what the electric motor is to the steam engine.

Perfected by Italian Engineer

It was the Italian engineer Revel who perfected the first commercial electric boiler. Towards the beginning of the war he installed at the Bussi works of the *Societa Italiana di Elettro Chimica* a set of seven 800 horse power boilers heated by means of three-phase current at 6,000 volts. This plant, which has been working quite normally for several years, is run mainly on the surplus night current of the large central hydro-electric station at Pescara, which supplies power to Naples.

The use of electric boilers has grown considerably in Italy, and there are several hundred of them now in operation. In Switzerland several of the largest machinery building firms have devoted considerable time and attention to these boilers, among them Brown Voveri in co-operation with the Sulzer Works, and the Oerlikon shops with Escher Wyss. A considerable number have been installed and are giving satisfaction.

It seems that in France far too little importance has been attached to the problem. While interesting and successful experiments were being carried out elsewhere, we contented ourselves with making simple calculations to show that on the whole this application of electricity was not worth considering. But nevertheless France can boast the possession of what we think are the largest electric boilers in the world. The Fredet Paper Mills at Brignoud had been studying the matter for quite a long time. In September, 1919, they installed an experimental boiler which was soon perfected and absorbed 2.500 horse power, taking three-phase current at 6,500 volts by means of three electrodes which plunged in a large volume of water.

This boiler worked perfectly and served to show the advantages of the system. In January, 1920, the Fredet Paper Mills ordered from the Etablissements Régis-Joya, of Grenoble, two boilers of 5,000 horse power each, taking three-phase current at 6,500 volts and generating steam at a pressure of 6 kilos (about 80 pounds). The first of these boilers was started up at the beginning of May and the second shortly after. They supply steam to the four paper machines of the mill.

In May and during the early part of June the Brignoud boilers were used in conjunction with the coal-fired boilers. During the latter part of June and the whole of July they supplied the whole of the steam required by the paper machines, taking from 5,000 to 6,000 horse power according to the production of paper. During the month of August the available power decreased owing to the lowering of the level of the water in the rivers, so that coal-fired boilers had to be started up again and the power supplied to the electric boilers was gradually cut down. They were shut down entirely towards the latter part of August on account of drought; but they were started up again at the time of the first rains at the end of September. At the present time they absorb from 500 to 1,500 horse power during the day, and sometimes over 5,000 horse power at night.

Actual tests have shown that these boilers can be brought up to pressure in less than half an hour; but on account of their size it is preferable to do so in three hours. When they are under pressure, the amount of power absorbed can be varied within very wide limits almost instantaneously, and they are admirably suited to the varying conditions which are met with in the circuits of large hydro-electric central stations.

Can Be Suddenly Started or Shut Down

Each of the boilers consists of a large sheet metal cylinder 10 meters long and 1.5 meters in diameter, thus constituting a large steam accumulator, which is necessary to ensure uninterrupted operations. At Brignoud a paper machine or a digester can be suddenly started up or shut down without abnormally affecting the steam pressure; while on the other hand the fluctuations in the current, or even the actual cutting off of the current, are less dangerous. The current may be cut off for over half an hour without interfering with the operations of the paper machines even when the electric boilers alone are working.

The Italians prefer to use small boilers, together with a steam accumulator, aiming thereby to avoid two difficulties: the effects of uneven expansion of the boiler shell, and the sudden liberation of large amounts of steam in case one of the insulators should break down.

In high tension electric boilers, that is, in those in which electrodes dip into the water, the lower portion of the boiler is nearly cold, while the upper portion is at the temperature of the steam. This results in unequal expansion, which, in the case of long cylindrical shells, tends to strain the rivets excessively and cause leaks, as happened in the first boiler at Brignoud, which was 6 meters long. This can easily be remedied by means of an automatic heating device for the bottom of the boiler, or else by feeding it hot water.

As to the sudden liberation of a large amount of steam, this is not a serious drawback if the installation has been properly designed. And at any rate it is a simple matter to arrange special piping to lead this steam outside the building, as is often done in the case of safety valves.

Fitted with Quartz Insulators

The trial boiler which was first set up at the Fredet Mills merely had ordinary porcelain insulators such as are used on 15,000 volt switches. These makeshift insulators broke down occasionally,

*(Translated from La Papeterie, 43, 485, (June 10, 1921), by A. Papineau-Coutture.)

but without doing much harm. The large boilers which are in use at the present time are fitted with specially designed fused quartz insulators, which have a very large factor of safety. Up till now only one of them has failed, and this was because it was cracked to start with and had not been tested. As the cost of the insulators is negligible compared with that of the boiler, by using a very large factor of safety there is practically no danger of any insulator breaking.

The combination in the one apparatus of the steam generator and accumulator makes for simplicity and decreased floor area, and consequently for economy. Especially when using a high voltage this arrangement is much safer and more reliable, as the electrodes are far enough apart and as they dip in a large body of water.

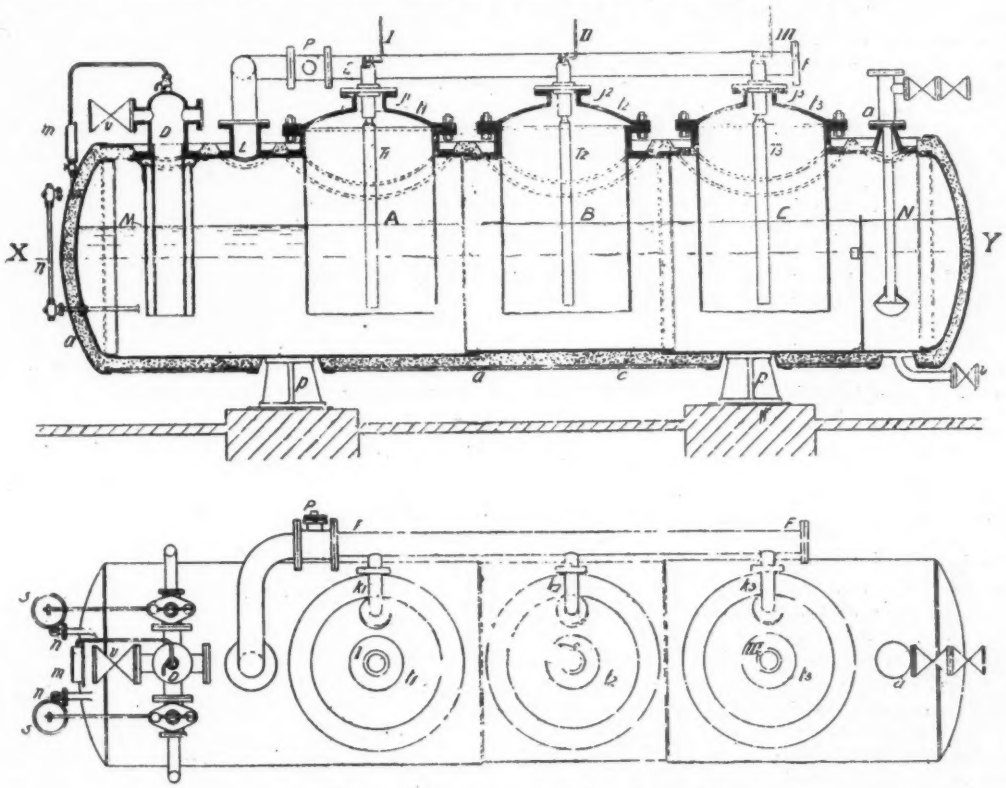
With small boilers a maximum voltage of 6,000 volts can be used and even then only if the water is very pure and great care is taken in operating. The constructors guarantee satisfactory operation only for voltages of 3,000 or less. Moreover, if higher tensions are used, special devices, which are more or less complicated, must be used.

The large boilers at Brignoud have always run with truly remarkable regularity at a voltage which often rose above 7,000 when the load on the circuit (the normal voltage of which was 6,500) dropped to a minimum.

Small boilers cannot take much more than 300 horse power per electrode, while the larger ones can easily absorb up to 800. The 5,000 horse power, 6,500 volt boilers at the Fredet Mills have but 6 electrodes, which are placed in a straight line and are spaced 1.2 meters apart. This gives a very simple and very economical arrangement for large units, and the loads are perfectly balanced.

Making the Most of "White Coal"

In view of the results obtained to date, the Fredet Mills and the Joya construction works are about to organize a company for developing as much as possible this application of the electric current. As the present high cost of living is in a large measure due to the high price of coal, it is important to economize it as far as possible and hence not to lose any energy which can be utilized. Electric steam boilers give us the means of making the most of some of the "white coal" which up till now has been going to waste; and we therefore feel certain that such an applicatien will be looked upon favorably by those entrusted with the development of our natural resources.



THE ELECTRIC BOILER OF THE FRÉDET PAPER MILL

The "Bergeon-Fredet" Boiler

The following is a description of the "Bergeon-Fredet" electric steam boiler installation, which has been in operation for the last few months at the Fredet Paper Mills, at Brignoud (Isère).

There are three of these boilers, each of them containing a large volume of water and also a large amount of steam. They take three-phase, 50-cycle current at 5,000 volts.

The accompanying photograph shows the two most recently installed boilers, each of which absorbs 3,500 kilowatt hours and generates 4,500 kilos of steam at a pressure of 6 kilos (about 80 pounds).

The diagram shows a plan and a section elevation of the "Bergeon-Fredet" boiler, as it is now being constructed by the Etablissements Régis-Joya, of Grenoble.

Description

It comprises:

—A sheet steel, horizontal, cylindrical boiler shell, with convex ends, the size of which depends on the amount of steam required and on the sudden variations in the load.

—Three vertical, cylindrical, sheet metal evaporation chambers *A, B, C,* which go down some distance into the body of the shell and which are connected to it by means of the large collars T_1T_2

T_3, which are of cast steel. They are closed at the top by means of the collars t_1, t_2, t_3, which are bolted to corresponding flanges. In the center of the covers there are openings J_1, j_2, j_3, through which the electrodes enter the boiler; and the pipes k_1, k_2, k_3, in the side of the covers carry away the steam which is generated in the chambers.

—Special patented fused quartz insulators, which insulate the electrode leads from the boiler shell and which are steam tight at the working pressure of the boiler.

—A header *EF*, provided with a regulating valve *P*, through which the steam from the evaporation chambers is lead into the main steam space of the boiler, through *L*.

—A steam is drawn off through the dome *D*, but must first pass through a separator.

—The usual safety devices; valves, water levels, manometers; the feed water inlet, *a*, with check valve; the blow-off valves; the cast iron supports for the shell, etc.

—An insulating covering of polished sheet metal, lagged with fiber board and asbestos powder.

Method of Operation

The boiler is filled with water to the level *MN*, which must first be determined by trial so as to give the desired power consumption and steam evaporation. The main high tension switch is then thrown in, which brings the three-phase current to the electrodes I, II, III. The circuit between the electrodes is completed by the mass of water in the boiler, which, under the Joule effect, soon reaches its boiler temperature. The steam generated in the evaporation chambers passes out through k_1, k_2, k_3, and header *EF* into the main steam space of the boiler where it mingles with the steam from the main body of water outside the evaporation chambers.

It is freed from entrained water in a corrugated sheet metal separator, and passes out through the dome *D* to the apparatus where it is to be utilized.

The regulating valve *P* enables the production of steam to be regulated instantaneously. If the valve is closed slightly the steam is throttled somewhat, and the pressure in the evaporation chambers becomes slightly greater than in the main steam space. Water is forced out of the chambers, thereby lowering the water level in them, and also the degree of immersion of the electrodes. The Joule effect is consequently decreased, and with it the production of steam. If the valve *P* is completely closed the water is entirely driven out of the evaporation chambers, stopping all generation of steam. However, if the boiler is to be shut down for any length of time it is advisable to open the main switch.

It is thus seen that the Bergeon-Fredet boiler is passed the experimental stage. It is very reliable and very flexible, and is particularly attractive for the utilization of cheap surplus electrical energy. Numerous improvements are at present being studied; and, after the practical demonstration at Brignoud, it is quite safe to say that France will in no manner be dependent on foreign countries for the utilization of electric energy for the generation of steam.

THE COOKING OF RAGS*

By Herman Grimm

(*Continued from* Paper Trade Journal, *December* 15, 1921)

Laboratory Cooks

The preceding section reported the results of absorption experiments on bleached and unbleached fibers. The logical progress of the work would be to make laboratory cooks on each of these fibers with the various alkalies. Because of the elements of cost and time, these cooks had to be confined to unbleached hemp.

The laboratory cooks were planned to answer a series of questions and were arranged as follows:

1. It is possible that the amount of lime used in practice is too high. The experimental cook was carried out with a ratio of lime to rags which is the same as that used in a normal plant cook. Is the amount of lime sufficient? What is the influence of the normal cook upon the incrusting materials, etc.?

2. Does a preliminary absorption of the lime in the cold before the regular cook offer any advantage over the method used in 1?

3. In case a preliminary absorption period is used, is it sufficient simply to heat the digester without pressure, thus decreasing the steam cost?

3b. Does the introduction of carbon dioxide produce calcium carbonate in the fibers and does this result in mechanical disruption of the cell walls and loosening of the fibers, thus resulting in the possibility of obtaining a purer product because of more effective washing?

4. Can the practical use of lime and calcined soda, which in itself is irrational, be replaced by absorption of calcium hydroxide and subsequent action of sodium carbonate, whereby sodium hydroxide is formed in the fibers? The action would thus take place in the "nascent state" and would avoid an excess concentration.

Cook 1

The first cook was carried out as a normal lime cook. Three kilos of unbleached rags (air-dried) were treated with 200 grams (5 per cent) of lime (prepared as above) and the volume made to 10 liters. Titration with normal hydrochloric acid and methyl orange showed 16.9 grams lime per liter. An additional 10 liters of water were added, in order that the rags should be completely covered with the liquid; the concentration was therefore 0.85 per cent and the ratio of lime to rags was 5.63 per cent. The digester (30 liter capacity) was then 2/3 full. The concentration did not change during the cooking, since the method of heating was indirect. Because of the greater accuracy, the cooking was controlled by the thermometer and not the manometer, 145° (4 atmospheres) being used.

One-half hour was used in bringing to temperature, the cook maintained 4 hours at the same pressure, the blowing off was half an hour, the digester rotated an additional 20-30 minutes. The lowest temperature was 140°, the highest 147°C. After the cook was complete, the digester was allowed to stand 12 hours and then opened, the temperature being about 40°C (in actual practice it is 100°C or more) (one atmosphere pressure).

In order to determine the lime consumption, the liquor was collected from the rags—about 13 liters drained off. The other 7 liters were retained by the rags. This liquor was then titrated. Half of the rags were then well-pressed, in order to determine the lime adhering to the fibers—there will be a small error because of the liquid which adheres to the fibers—the rags covered with 15 liters of distilled water and, after adding a measured amount of hydrochloric acid, allowed to stand 48 hours. The excess was then titrated and the amount needed to neutralize the lime present in the fibers thus determined. 88 per cent of the lime added had been consumed in saponification, etc. An excess of 12 per cent is certainly not too high and is necessary to maintain the strength of the liquor.

The other half of the rags was washed with water upon a No. 70 sieve until the water was practically clear, requiring about half an hour, pressed and dried in the air. 150 grams of this air-dried material were treated with hydrochloric acid, al-

*This article appeared in *Zellstoff und Papier*, 1921. Translated by Clarence J. West, National Research Council.

lowed to stand 24 hours, washed and dried, as above; 1.88 per cent of hydrochloric acid based on the weight of the rags, were consumed, which was equivalent to 2.5 per cent lime.

Cook 2

Absorption with subsequent cooking. 3 kilos of unbleached rags were treated with 200 g. (5 per cent) lime, diluted to 20 liters, titration of which showed 8.05 grams lime per liter. The mixture, with occasional rotation of the digester, was allowed to stand 4 hours in the cold and the liquor then drained off. Ten liters were recovered, 1.25 liters remained in the heating coil, while the remainder was in the rags. The digester was then heated with direct steam to 145°, maintained at this temperature for 4 hours, with subsequent treatment as above. The lowest temperature was 142°, the highest 147°. The temperature at the opening of the digester was 32°C. The liquor was drained off—there was 1.5 liters of condensate from the direct cooking—the pulp washed and dried in the air.

Cook 3

Absorption with subsequent cooking without pressure. Preliminary steps as in 1 and 2, absorption as in 2.

(*A.*) After decanting the liquor, the product was heated to 100°C without pressure and this temperature maintained for 4 hours; the condensed water was removed from time to time and the digester rotated for 20-30 minutes. During the last hour the condensed water was left in the digester. After 12 hours the temperature was 33°C; the digester was then opened, the liquor, about 1 liter, removed and the rags treated as above.

(*B.*) The mixture was warmed with direct steam to 100° and maintained at this temperature for 6.75 hours, during which time a stream of carbon dioxide was led into the digester. The condensed water was removed as in *A*, and the digester rotated from time to time. After each rotation the carbon dioxide stream was resumed and continued until the next rotation of the digester (20 minutes).

After opening the digester the contents were at once acidified with hydrochloric acid, allowed to stand 24 hours, then washed and dried. Rather large amounts of hydrochloric acid were needed and the acid reaction disappeared several times during the first 3 hours.

The reason for the introduction of the carbon dioxide was: calcium carbonate should form in the fibers which are saturated with lime (calcium hydroxide), resulting in a bursting of the fiber bundles and thus give rise to better digestion and a better purification by washing of the resulting product. In addition, the fibers thus disrupted should not be strongly attacked during the beating process and thus possess better strength properties.

Cook 4

Absorption with subsequent soda cooking. The treatment with lime was as under 2 and 3; after removing the lime liquor, the product was cooked 4 hours at 145°C with the lime which it had taken up, and with the corresponding amount of soda solution. This amount could naturally only be estimated, but a ten per cent excess was used, in order to provide sufficient soda to form the sodium hydroxide necessary for the further carrying out of the digestion. The details of the cook are the same as under 1. Upon opening the digester the temperature was 40°C. 9 liters of liquor were obtained. The product was washed and dried as usual.

The products obtained as above were analyzed in the same way as the original materials (part 2). The results are shown in the following table:

Constants of the Materials from the Laboratory Cooks

Material	Water	Ash	Furfurol	Pentosan	Extract: Ether	Extract: Alcohol	Extract: Total
Unbleached hemp	7.93	1.96	2.61	4.46	1.55	1.30	2.85
Cook 1	7.3	4.25	1.47	2.53	1.39	0.83	2.22
Cook 1, acidified	7.2	1.04	1.35	2.32	2.20	0.73	2.93
Cook 2	6.5	4.29	1.44	2.48	1.25	0.75	2.00
Cook 3a	7.3	3.75	1.68	2.89	1.41	0.84	2.25
Cook 3b	8.6	1.17	1.44	2.48	2.09	0.71	2.80
Cook 4	7.1	5.91	1.35	2.31	1.52	0.87	2.39

Discussion of Analyses

The ash content, with the exception of the acidified material of cook 1 and the likewise acidified material of cook 3 which had previously been treated with carbon dioxide, is considerably higher than is that of the unbleached hemp. Naturally, lime is retained by the fibers from the cooking process, which cannot be removed by simply washing the product as is done in these laboratory tests. Later results will show that the principal part of the lime which remains on the fibers is removed during the mechanical treatment of the fibers in the washing and beating processes. The ash consists, for the most part, of calcium carbonate, as may be seen by the action of a drop of hydrochloric acid. This is probably the reason for the lower ash contents in cooks 1 and 3. The action of the acid forms water-soluble calcium chloride, which is removed during the washing process.

In cook 4, the ash is specially high because of the formation of calcium carbonate due to the reaction of sodium carbonate and the lime. The low ash content of 3a is probably due to the lower calcium absorption due to the lack of pressure, which is also seen in the less vigorous digestion; the pentosan number is highest in this cook. This number is about a half lower than in the uncooked, unbleached hemp.

The high ether extract is noticeable in the case of the two acidified products. Starting from the assumption that in the digestion under ordinary conditions, all the soluble matter is removed, it must be concluded either that the acid causes a chemical change in the extractives or liberates certain materials that were not soluble before. A possible proof of this is the fact that the substitution of other solvents, such as benzine, petroleum ether, carbon tetrachloride or mixtures of these, gave other value. In spite of the fact that the alcohol extract is always lower, the total extract is higher. As shown later, the figures for the half stuff obtained in larger experiments are much lower than these. Considering this in connection with favorable ash contents, it may be that a combination acid treatment may lead to yet purer materials. Lack of time prevented a test of this.

Comparison of the other ether and alcohol extract figures shows that, with the exception of cook 4, there is a decrease in these values, especially in those of the alcohol extract. Most satisfactory seems to be No. 2; here also a further decrease may be obtained by proper mechanical manipulation.

Conclusions

Cook 1 gave a good hydrolysis or digestion; of the lime used 88 per cent was consumed; the incrusting materials were decreased, but further decrease must be brought about by mechanical action. The treatment with acid proved satisfactory and is recommended.

Cook 2. The preliminary cold impregnation with lime has a favorable action upon the ether-alcohol number, but the other values are not changed. Results of a factory cook are given below.

Cook 3a. No great difference in the extraction numbers are observed, specially in comparison with cook 1, but the absence of pressure seems unfavorable as seen in the ash and pentosan values. The alcohol and ether extracts are also higher in comparison with those of cook 2. The need of pressure during digestion is thus again confirmed.

Cook 3b. The treatment with carbon dioxide has no apparent advantage. The improved ash content must be ascribed to the acid treatment. Thus, instead of having a favorable action, the carbon dioxide appears to cause the formation of a crust of calcium carbonate upon the fiber which is not readily penetrated.

Cook 4. The results of the cook with lime and soda are not favorable. To be sure the pentosan value is lower, but the ash is high and the ether and alcohol extracts are higher than in the other cooks (excepting the two acidified samples).

(To be concluded)

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Method of Making Reinforced Paper.—Can. patent No. 194,106, Edward H. Angler, Framingham, assignee of William M. Wheildon, Ashland, both in Mass., U. S. A., Nov. 18, 1919.—Webs of paper are prepared with a layer of adhesive in which is incorporated reinforcing strands extending longitudinally of the web. One of the webs is then cut transversely into sections which are assembled transversely with the other web. Claims allowed 6.—A. P.-C.

Composition and Process for Sizing Paper.—Can. patent No. 194,151, Judson A. DeCew, Montreal, Que., Can., Nov. 25, 1919.—A colloidal solution of oil and rosin, produced by diluting soap in which rosin and oil have been dissolved, is incorporated into the paper stock in the beater or mixer. Claims allowed 3.—A. P.-C.

Process for the Manufacture of Bleaching Powder.—Can. patent No. 194,216, Alfred Rudge, Gateshead, Durham, Eng., Nov. 25, 1919.—Lime and chlorine are made to travel on the counter-current principle through a long cylindrical space with external cooling. (Cf. Fr. patent No. 488,594, Castner-Kellner Alkali Company, Ltd., and J. W. Moore, Jan. 24, 1918.)—A. P.-C.

Testing Filter Paper.—Anon. *Zellstoff u. Papier*, i, 61 (May, 1921).—In the Herzberg apparatus 100 cc of distilled water at 20°C passes through 10 sq. cm. of the paper under a pressure of 50 mm. In unit time the amount of water running through a given paper is inversely proportional to the viscosity of the water, for which Thorpe and Rodger's values are given. The temperature of the water is an important factor.—H. E. W.

Removal of Offensive Odors in the Sulphate Pulp Mill.—Carl G. Schwalbe. *Zellstoff u. Papier*, i, 69 (June, 1921).—Translated by Clarence J. West in *Papier*, xxviii, 13-15 (Aug. 17, 1921).—According to Klason mercaptans, methyl disulphide and methyl sulphide are formed in the sulphite process. The amounts of these products per ton of pulp are stated. Klason found 1.3 mg. of methyl sulphide in 1 cu. m. of flue gas. When caustic is used instead of sodium sulphide the yields are lower and the fiber is inferior, and the liquor has an odor which is attributed to the sulphur compounds of the woods. High chimneys have been installed with a view to discharging the gases into the higher strata of air and thus render the waste gases innocuous. Sunlight exerts an oxidizing action on these compounds, and the effect is noticeable on a cloudy day. The condensation of the water in the gases yields an ill-smelling liquid which is a nuisance and the removal of which requires such oxidizing agents as permaganate, peroxides and bleach, and the treatment is expensive. The patents of Muller, Nielsen, Schacht, Schwalbe, Waldhof are mentioned, and especially Ger. patent No. 319,594. Schwalbe in this patent allows the gases to pass through wood chips simultaneously with chlorine. The wood is eventually used for pulping as the fiber is not harmed by chlorine.—H. E. W.

Incrusting Matter and Mercerizing Liquor.—Schwalbe and Becker. *Zellstoff u. Papier*, i, 93 (July, 1921).—In determining alpha-cellulose pentosan constituents are dissolved out at the same time and the remaining cellulose is not completely stable toward caustic. In handling wood cellulose with strong caustic the pentosan content decreases and also the methyl content.—H. E. W.

Modern Wood Handling Machinery.—J. M. Voith. *Zellstoff u. Papier*, i, 26 (April, 1921).—H. E. W.

Bronze Beater Knives.—K. Lichterfeld, Ger. patent No. 331,351. Individual knives are set in an iron U-shaped groove which is protected against rusting by a wooden strip.—H. E. W.

The Schubert Beating Tester.—Grunewald. *Zellstoff u. Papier*, i, 21 (April, 1921).—The tester consists of a tube closed at one end by a screen and the other end is joined by a rubber tube bearing a stopcock to a mercury manometer. The mercury in the manometer is set at zero on the upper part of the scale and the stopcock is closed. The bulb of the apparatus is closed and a sample of the beaten fiber is placed in a vessel into which the screen end of the tube may be placed. The cock is then opened and the mercury in falling draws the stock against the screen. The time and the distance the mercury drops are measured and conclusions are drawn from these data. Tests conducted on linen, cotton, straw fiber, groundwood and wood cellulose are reported and curves showing the results are given. The Schopper-Reigler apparatus for testing and beating was used in this work. Time of beating, roll pressure and stock density are all considered in this work.—H. E. W.

Oily Steam in Drying Cylinders.—Grunewald. *Zellstoff u. Papier*, i, 60 (May, 1921).—The view that oil in steam lowers the efficiency of drying cylinders by forming a heat insulating layer is shown to be untenable.—H. E. W.

Evolution of the Paper Machine.—Grunewald. *Zellstoff u. Papier*, i, 81 (June, 1921).—The article mentions the present tendencies in the construction of paper machines and gives a description of recent improvement in machine accessories.—H. E. W.

Hemp Wood as a Paper Making Material.—B. Rassow and A. Zschenderlein. *Z. angew. Chem.*, xxxiv., 204-206 (1921).—Abstracted by Clarence J. West in PAPER TRADE JOURNAL, lxxiii, 46, (Oct. 13, 1921).—Data on the cellulose content of hemp wood as determined by various investigators are given. Digestion of the wood by water gave pulp suitable for kraft and when caustic was used the pulp contained large amounts of pentosans (20 per cent) but the amount of pentosans in the pulp obtained by the sulphite process was 10 per cent.

Dyeing Paper Pulp.— Translation by Clarence J. West. PAPER TRADE JOURNAL, lxxiii, 42 (Sept. 22, 1921).—To determine whether it is better to add dye to the stuff in the beater before or after adding the size, 70 g. of moist bleached sulphite in 150 cc of water and then equal amounts of 1 per cent dyestuff solution, rosin size and alum were taken. The consistence of the pulp was 3 per cent. The poorest results were obtained when the order of adding the materials was rosin size, alum, pause, dye solution. The best results were secured when the following order was adopted: dye solution, rosin size, pause, sodium bicarbonate, alum.—H. E. W.

PUMPS AND PUMPING MACHINERY

(*Continued from page* 47)

33,000 = Foot pounds represented by – Horse Power.
E = Efficiency of the pump taken from the above table.
Example:—

Take again 8 x 8 triplex pump operating at 50 R.P.M. crank shaft speed and therefore giving a displacement capacity of 259.7 G.P.M. as estimated before and assume that we wish to pump fresh water against a total head of 150 feet, we have:—

$$\frac{259.7 \times 8.33 \times 150}{33{,}000 \times .75} = 13.2 \text{ Brake H.P. required.}$$

8.33 = Weight of one U. S. gallon of fresh water in pounds.

In this instance a motor rated at 15 H. P. would be selected to operate the pump as being the nearest standard rating motor and allowing for a small margin of power above the estimated requirements to take care of possible small error in estimating the pumping conditions, particularly the total head.

(*To be continued*)

Announcement

Hall, Ward and Walker, Inc., wish to announce a change of its corporate name effective January 1, 1922, at which time the name of Wood Grinding Service, Inc., will be assumed.

Our personnel will be the same under the old name and our business will in the future continue to be as in the past: the rendering of expert assistance in all matters pertaining to the grinding of wood pulp of superior quality and its conversion into paper with low percentages of sulphite.

Our Process and Appliances are protected by Letters Patent in the leading paper-making countries of the world and we are now prepared to assign national rights or issue individual mill licenses in each of the following countries:

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on extremely favorable cash or monthly payment terms.

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ROGERS WET MACHINE

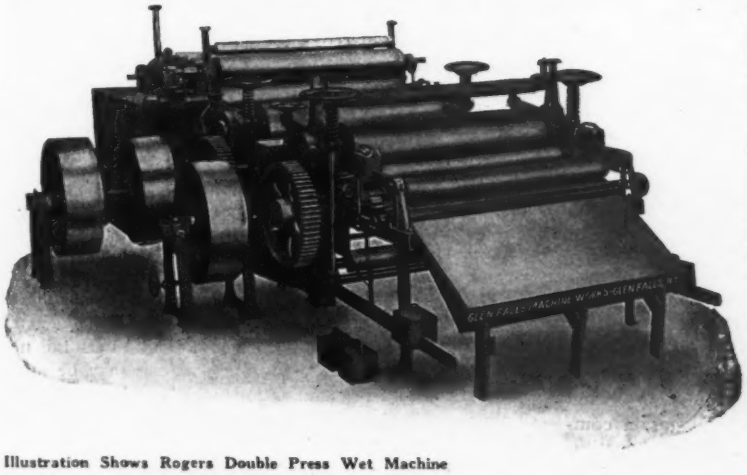

Illustration Shows Rogers Double Press Wet Machine

FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.

TYPES—Single and Double Press 72" wide.

CAPACITY—either type 25-30 tons air dry stock per 24 hours.

SHEETS produced by the Double Press Machine uniformly 48% dry. By the Single Press Machine uniformly 40% dry. There is no fold to contain excessive moisture. Sheets are handy size, 33"x36", and are folded once into most convenient bundles for storage, for the beater or for shipping. By this great capacity, high dry test, small amount of floor space per ton pulp produced, exceedingly low cost for labor and maintenance, users are assured that the machine will completely pay for itself within one year, and are promised a handsome return on their investment.

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DETERMINATION OF THE DEGREE OF LIGNIFICATION IN WOOD AND PULP*

By Rudolf Sieber, Kramfors

The determination of lignin in pulp and wood according to the approved methoxyl method (methyl number) possesses many difficulties at the present time because of the difficulty of securing and the high price of the necessary hydriodic acid. It is therefore of especial interest to learn of experiences with other methods which may be applied, the chemicals for which may be purchased without any special difficulty. Among these methods for the determination of lignin are those of Becker and of Willstätter, as well as the method of von Fellenberg for the splitting off of methyl alcohol from the lignin.

The analytical basis of these methods is simple. In the first two mentioned, the cellulose is transformed into soluble sugars by the action of highly concentrated sulphuric or hydrochloric acid, while the insoluble lignin is determined gravimetrically. In the method proposed by von Fellenberg, the capacity of boiling concentrated sulphuric acid to split off methoxyl from the lignin nucleus in the form of methyl alcohol is utilized This can be removed and concentrated by known methods and determined colorimetrically according to Denigès, so that it gives a measure of the lignin content of the material analyzed.

The methods and details for these determinations are to be found in the literature. (See, for example, Schwalbe, *Die chemische Untersuchungen pfanzl. Rohstoffe,* Berlin, 1920. The section dealing with lignin was translated by West and appeared in *Paper,* Feb. 9, 1921, etc. Also, see Schwalbe and Sieber, *Betriebskontrolle,* Berlin, 1919). In this connection methods will be given only in so far as is necessary to understand the changes.

The lignin determinations of Becker and Willstätter give greater differences in the lignin content of pulps. In determining the lignin content of similar substances, the values are somewhat uncertain. In general, the two methods appear to give too high values. Those by Becker's method are, on the average, higher than those obtained by Willstätter's method.

Special attempts were made to obtain lower results by the first method through changing the conditions of the analytical procedure. Noticeable results were not obtained, however. The attempts made by boiling the diluted solution (1:10) were of little value. Becker reports that only occasionally were results obtained which were lower than those of Willstätter's. Heuser (*Papierfabr.* 1921, Festheft, 76), from experiments of Wenzel, believes it necessary, in order to obtain correct results in the determination according to Willstätter, to warm the diluted solution in order to complete the hydrolysis to sugar. This not only caused a coagulation of the finely divided colloidal turbidity in the solution but at the same time made filtration easier. On the other hand I have observed in the following experiments and also in a large number of additional analyses of pulps that, upon solution of the cellulose and during the introduction of the hydrochloric acid gas, a complete coagulation of the lignin and other colloidal constituents rapidly takes place. This may be easily observed in the case of hard pulps. It is possible, because of this phenomenon, to begin the filtration considerably earlier than in the use of sulphuric acid. In the case of soft pulps, this coagulation does not occur until the gas has been passed in for some time. At the present time there is lacking knowledge as to the cause of this increased yield of lignin. It is hardly conceivable that it is due to undecomposed cellulose. Against such a supposition is the fact that the increase, in the case of resinous woods, is almost proportional to the increasing resin content.

So long as this point is not clear, one must consider lignin values determined by either of these two methods of relative value only.

As concerns the lignin determination by the method of von Fellenberg, it seems, without doubt, to be a substitute for the original methoxyl determination. In the case of certain pulps, it has been established that the two determinations of methoxyl gave closely agreeing results. The values obtained according to von Fellenberg can be expressed directly as the methyl number of the pulp. One determines, according to this method, it is true, the total amount of methoxyl group, thus including that from the pectin. Concerning this, von Fellenberg has remarked that wood contains only a minimal amount of pectin bodies, and that these would scarcely influence the results obtained. It may be stated as a fact that the pulp from wood does not contain sufficient pectin to yield methyl alcohol in amounts that could be determined by this method. The lignin isolated from fir wood by Willstätter's method likewise did not contain pectin in amounts that could be determined.

The following table gives the results of the experiments:

Lignin Determinations

	Lignin According to		Methyl no. von Fellenberg	Methyl no. Benedikt and Zeisel
	Becker	Willstätter		
Sulphite pulp 1, soft	1.68	1.58	1.60	1.55
Sulphite pulp 2, soft	1.53	...	1.30	...
Sulphite pulp 3, soft	1.67	1.53	1.81	...
Sulphite pulp 4, soft	1.60	1.49	2.00	1.92
Sulphite pulp 5, soft	1.29	1.34	1.59	...
Sulphite pulp 6, hard	4.60	4.66	4.86	4.70
Sulphite pulp 7, very hard	7.10	6.50	6.90	...
Sulphite pulp 8, very hard	9.26	8.18	9.40	9.22
Sulphate pulp 9, hard	3.58	3.40	3.20	...
Sulphate pulp 10, soft	1.63	1.20	1.84	1.87
Wood	...	...	2.58	2.58
Lignin	...	...	7.00	7.20

Becker's Method

In order to secure a more rapid and complete solution of the cellulose in hard pulps, the following method is advantageous: The finely divided pulp sample is first moistened with a little concentrated hydrochloric acid, thoroughly mixed and then placed in a moderately warm place or in a breaker with warm water (not over 50 to 60°). In this way the pulp becomes soft in a very short time, and specially quickly if the mass is stirred frequently with a glass rod. If the crumbly mass is then treated with the sulphuric acid, solution follows rapidly, even with the hardest pulps. At times the necessary division is often difficult. Larger particles may be mixed with the sample under examination which, when placed in the sulphuric acid, become covered with a parchment-like layer, the solution of which is greatly increased.

The filtration of the lignin is not accelerated, many times, if the reaction mixture, after dilution 1:10, is heated to boiling. Further, in Willstätter's method, it is desirable to precede the real hydrolysis to sugar by a transformation of the cellulose into hydrocellulose. The solution of the cellulose is carried out as follows: After the above described hydrolysis, the product is poured into concentrated hydrochloric acid and this mixture is treated with dried hydrohloric acid gas. In the course of an

*From Zellstoff und Papier, November, 1921, 1, 223-226 (1921). Translated by Clarence J. West.

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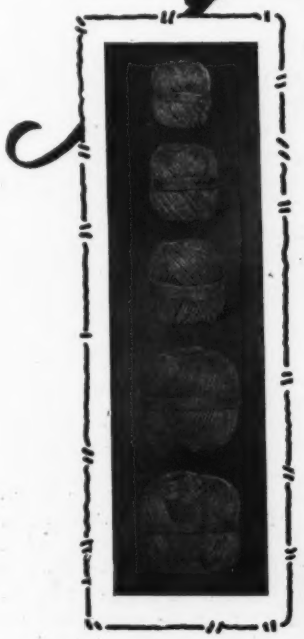

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CORDAGE

DETERMINATION OF LIGNIFICATION IN WOOD AND PULP

(*Continued from page* 54)

hour, if the gas is passed in slowly, the cellulose is completely dissolved, while the lignin coagulated into an easily filterable form and separates out. This method save the warming of the reaction mixture in order to facilitate filtration. If one is analyzing several samples, the reaction vessels may be so arranged that the gas passes from one into another. The last flask may be connected with an air pump giving a slight vacuum. In this way the annoyance from the gas is reduced to a minimum.

The filtration of the lignin prepared by this method is easier and quicker than in the method according to Becker, though his method, in itself, is somewhat simpler.

Von Fellenberg's Method

At first glance, von Fellenberg's method appears to be rather complicated. When, however, one has assembled the necessary apparatus, the additional work of the method is comparatively small. A colorimeter is needed for the determination, but, if necessary, this can be constructed out of materials which may be easily purchased. It is advisable, though only necessary in case of those samples containing much rosin and fat-containing material, to extract with alcohol and ether. The material thus prepared is placed in a 300-400 cc. flask, which is connected with an upright condenser. This may be made from a thin glass tube as the distillation tube and a larger tube as a cooling chamber. If one uses an ordinary condenser for this purpose, it is necessary to wash out the inner tube, because of its rather large diameter, in order to avoid loss after the distillation. This can be omitted in case smaller tubes are used. Another advantage of the self-constructed condenser is that the proper length of tube may be selected. The connection of the distillation flask with the condenser may be made with rubber tubing, thus avoiding the use of cork stoppers. The material in the flask is treated with 15 cc. 72 per cent sulphuric acid and the flask connected with the condenser. The receiver consists of a small vessel of 70 to 100 cc. capacity. In order to avoid loss of the distillate the receiver is first washed out with water and then placed so close to the end of the condenser that the vapors from this are condensed by the little water remaining on the bottom of the receiver. The receiver is marked so as to indicate a content of 25 cc. The decomposition of the material is carried out as described in the original article. The distillate is redistilled in a similarly constructed apparatus, a tared flask beng used as a receiver. This time 16 cc. are distilled, of which 3 to 5 cc. are used for the determination of the methyl alcohol.

It is advantageous to carry out the comparative determination with a standard of 5 mg.; better values are obtained and secondary color changes are the least noticeable. The following amounts of sample are suitable: hard pulps, 0.6-0.7 g., medium, 1 g., bleached, 1.3-1.7 g. For weighing the samples, an ordinary horn balance may be used, the accuracy thus obtained being sufficient, considering the small lignin content. This balance is also suitable for use in the other methods mentioned as well as in weighing the distillate.

If two distillation apparatus are available, 6 determinations may be carried out in about 5 hours.

Conclusions

Experiences are related with the lignin determination according to Becker and to Willstätter and the indirect method of von Fellenberg. Several experimental changes in the methods are reported. The first two methods give too high results for the lignin content. These values may be used for purposes of comparison. The method according to von Fellenberg may, at present at least, be used as a substitute for the methoxyl determination according to Zeisel.

SLOW DEMAND IN PHILADELPHIA

(*Continued from page* 18)

dition of six more machines. The firm is now equipped to turn out a large capacity of special tubes such as those used by florists for mail purposes, and twine winding. In the new building three floors are devoted to the manufacture of board specialties of difficult manufacture, and novelties on an elaborate scale. While the firm has been established ten years, it is only recently that the manufacture of tube specialties has been undertaken.

Discontinuance of the former offices of the Safe Pack Paper Mills, at 2406 Letterly street, were announced upon the removal the first of the year to its new quarters in the office of the Economy Baler Company at 410 Arch street. Elliot Andrews is the Philadelphia representative for its lines of waterproof papers. The demand from the central manufacturing plants necessitated removal from the Kensington district to more available quarters.

The Saxe Paper Company, 320 Race street, has placed an additional member in the sales force, when Harry Witzman, with the new year, was booked to look after the Philadelphia and Camden territory.

Simon Walter expects to move into his new plant about the week of the 23d. Remodeling of the newly purchased building on North Fifth street is about completed. Thomas F. Kennedy, vice-president of the firm, spent the week in New York.

A five-day week is in operation at the John Lang Paper Company, 24th and Vine streets, owing to the quietness in the roof papers market.

United Paper To Build Hydro Electric Plant

[FROM OUR REGULAR CORRESPONDENT.]

WATERVILLE, Me., January 18, 1922.—Work will be started before spring on a new hydro-electric plant for the United Paper Board Company. The plant will be just north of the trolley bridge and below the dam of the local mill of the company. It is also planned, at a later date to replace the present wooden dam with one of concrete, as the old hydraulic development is not suited to the new mill that was erected about a year ago.

Besides the construction of the electric plant, there will be a rock excavation in the river bed for a tail race and the river will be widened as the old flume and wheels are nearly useless. The new plant will be 60 feet square, about 50 feet in height and will be constructed of steel and concrete. It is expected to develop 2,500 horsepower. The wood room of the Benton Falls mill is the only department that has been running for some time past, but according to Superintendent H. R. Kimball all departments will be in operation as soon as the new plant is completed and the output will be considerably increased.

Electricity from the new plant will not be transmitted to the Fairfield mill of the company, at least not for a time. The contracts have not been let for the work as yet. Water power has been used in the past. The wheels and generators of the new plant will be of the most modern type of vertical units. The machinery will be driven by electricity from the motors and the grinders will be operated by directly connected motors. It is probable that the plant will be ready by early summer.

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ECONOMY

By Shepard "Aerial Railway" rehandling

Cost of rehandling pulp cut almost in half; five men released for more productive activity, greater efficiency and speed in doing the work—these are reasons why a Shepard Electric Hoist pays the Stevens and Thompson Paper Company, Greenwich, N. Y. The savings in handling one year's tonnage more than pays for the hoist which will continue to pay for itself many times.

This economy is appreciable and a vital factor in lowering production costs and is typical of the service rendered by "Shepards" wherever installed.

You, too, can cut costs by sending your loads via the "Aerial Railway" with a Shepard Electric Hoist; rehandling is done most efficiently—in the least time—at the lowest cost.

Shepard Engineers have planned efficient handling systems in many paper mills. They are at your service. You assume no obligation in inquiring.

Shepard builds Electric Hoists; Electric Travelling Cranes; Electric Transfer Cranes; Electric Winches; Electric Cargo handling equipment for docks and ships.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 18, 1922.

The New York paper market has not yet shown any great improvement over the quiet period imposed by the inventory taking and by the usual timidity of a new year. Although developments are slow the trade is generally satisfied, because it has long since determined that the months to come are not to bring rapid changes, but are to cover the slow retreat of the last remnants of the post-war depression. Ups and downs in the paper market are not anticipated and prices are scheduled to fluctuate over a very restricted range while following the trail back to the precedents of 1914. Much blame for the present lassitude in selling is laid to the salesmen of the generation who, it is stated, do not know how to sell and who look only for the everlasting dollar. While this is doubtless true to some extent, salesmen know of many conditions, causing the very slack demand and the hand-to-mouth buying, upon which to rest their failure to bring home the orders in old-fashioned volume. The domestic news print situation appears brighter under the ray of a German embargo on paper pulp. The ability of the Germans to greatly undersell domestic manufacturers has had the effect of making American buyers feel that they were being given a very bad bargain by domestic producers. In addition to this disquieting sentiment, a considerable volume of foreign pulp has been sold here and has tended to keep domestic prices at perilously low figures. Complaints are heard that there is no market at present, but answering voices find cause for optimism when comparisons of late business are made with that of the last year or two. Confidence is gradually being restored to the buyer and time alone can tell the story of normality in the paper field.

Some increased activity has been noticed in the news print market largely on account of an increase in advertising and the steady consumption of the large dailies. Prices are about as low as may be expected and profits are low unless large tonnage is moved. Little reaction has been observed in the market as yet, but added firmness is anticipated in the near future. Shipments of news print for December show an increase of 2½ per cent. over the shipments of November.

While the book paper market is still quiet it is beginning to attract some attention and inquiries are arriving more frequently. The undertone of firmness is artificial since production has been shrunk to keep in step with the slow moving demand. It is expected that the mills will soon be enabled to run at capacity and that the market will soon regain its lost prestige. Prices for the year, it is stated, will not spread over a very wide range. Seasonal fluctuations will be in order but the range will not be a wide one.

Business continues of the hand to mouth variety in the fine paper market where buyers apparently have little confidence in the prices quoted or in the fickle demand of the public at large. Stocks on hand are low in every quarter and this state of affairs accounts for the spasmodic demand for small lots for immediate shipment. Sales of this character assist the manufacturer very little and have a tendency to increase the feeling of dissatisfaction that is too ready to crop out at the present stage of the return to normalcy.

The demand for tissue is only for small lots for immediate shipment to refill depleted stocks. There is some dickering over prices on large lots and the repeated failure to come to teerms only exemplifies the lack of confidence in which the market is now held. The ironing out of labor difficulties in the garment and hat establishments will soon lend an added impetus to the demand for tissue.

The kraft market continues strong with the demand constant and production proceeding at mill capacity. Kraft dealers and manufacturers experience less difficulty in disposing of their commodity at their own prices than do merchants in other lines apparently because the buyers are satisfied that kraft prices will not go lower for some time. Unsettled conditions of transportation and labor are now the only factors regarding activity in the kraft department.

The board market is still quiet but a little firmer than before the holidays. Mills are running on part time and the present demand does not warrant any increase in operation for the time being. It is expected that within one or two months the board market will pick up and establish again a firm undertone of good feeling.

Mechanical Pulp

The mechanical pulp market continues quiet, although a moderate amount of business has been carried on during the past week. The supply on the market is not overabundant and assists not a little in equalizing the spotty demand and in holding prices firm. Low water in some localities is again retarding the production, and it is not expected that prices will go lower.

Chemical Pulp

A slight gain in activity has been registered this week in the chemical pulp market and indications are that improvement from now on will be steady. No great expansion in prices is expected for some time. The range of seasonal variation will approach $3 or 4 a ton. Dealers look for a better volume of business and feeling in many quarters has improved now that restrictions have been placed by Germany upon her exports of pulp.

Old Rope and Bagging

Practically no improvement has been seen in the old rope and bagging market during the week. The very spotty demand is hard to satisfy at profitless quotations and much bargaining results in most cases before satisfactory terms can be arranged. Paper mills have not yet begun to add to their low stocks in any great volume and the general feeling is that little betterment need be expected until the demand from this source is again awakened.

Waste Paper

The waste paper market is slightly firmer and a moderate business is being done at prices which hold steady. Waste paper prices are believed to have descended to the lowest level and paper dealers now await the return of the normal demand from the paper mills to create a healthy condition in their market once more.

Rags

Roofing rags hold first place in activity in this department. In fact, about the only demand perceptible is for dark cottons and shoppery. Arrivals of foreign rags continue in goodly volume. There is little precedent for the dullness in the rag market and dealers are at a loss to account for the lack of any pressure whatever upon the market.

Twine

Twine has had a slightly better week with buyers taking larger lots on the whole and with an increased number of inquiries which may soon be turned to good account since stocks of twine are low in every quarter. Manufacturers are optimistic for the future.

Harmon Paper Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., January 16, 1922.—The directors of the Harmon Paper Company of Brownville and the Warren Parchment Company of Dexter were all re-elected at the annual meetings held in this city today.

The directors of the Harmon Paper Company are J. J. Warren, R. T. Warren and F. M. Boyer, while those of the Warren Parchment Company are J. J. Warren, D. F. Warren, R. T. Warren, F. M. Boyer and I. Gilman, the latter being of New York.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations January 17, 1922:

STOCKS	BID.	ASKED.
American Writing Paper Company, pref.	22¾	23
International Paper Company, com.	47¾	48
International Paper Company, pref., stamped	67½	69½
Union Bag & Paper Corporation	67	69

Because of the unusual conditions prevailing in the various markets quotations are more or less nominal.

Paper

F. o. b. Mill.

Ledgers	10.50	@	30.00
Bonds	9.00	@	55.00
Writings—			
Extra Superfine	14	@	25
Superfine	13	@	20
Tub Sized	10	@	16
Engine Sized	9.00	@	15.00
News—f. o. b. Mill—			
Rolls, contract	3.50	@	—
Rolls, transit	3.75	@	4.00
Sheets	4.00	@	
Side Runs	3.25	@	3.50
Book, Cased—f. o. b. N. Y.—			
S. & S. C.	6.70	@	7.50
M. F.	6.45	@	7.25
Coated and Enamel	8.25	@	10.25
Lithograph	8.25	@	11.25
Tissues—f. o. b. N. Y.—			
White, No. 1	.75	@	.80
Colored	1.00	@	2.00
Anti-Tarnish	.82½	@	.85
Silver Tissue	1.50	@	2.70
Manila	.75	@	.80
Kraft—f. o. b. Mill—			
No. 1 Domestic	6.75	@	7.50
No. 2 Domestic	5.75	@	6.50
Imported	6.00	@	6.50
Screenings	2.50	@	3.50
Manila—			
No. 1 Jute	8.50	@	9.00
No. 2 Jute	7.75	@	8.50
No. 1 Wood	5.00	@	6.00
No. 2 Wood	4.25	@	4.75
Butchers	4.50	@	5.00
Fiber Papers—			
No. 1 Fiber	6.00	@	6.25
No. 2 Fiber	5.25	@	5.50
Common Bogus	1.80	@	2.10
Card Middies	4.00	@	5.00
Boards—per ton—			
News	40.00	@	45.00
Straw	35.00	@	40.00
Chip	37.50	@	40.00
Binders' Board	65.00	@	75.00
Sgl. Mla. Ld.Chip	55.00	@	60.00
Wood Pulp	75.00	@	90.00
Container	65.00	@	70.00
Wax Paper—			
Self Sealing White 28 and 30 lb. basis	.12	@	.13
Waxed Tissue	1.52	@	1.80
Glassine—			
Bleached, basis 25 lbs.	.14	@	
Bleached, basis 20 lbs.	.16	@	

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	38.00	@	42.00

F. o. b. Pulp Mills.)

No. 1 Domestic	32.00	@	40.00

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—			
Bleached	4.25	@	5.00
Easy Bleaching	3.25	@	3.50
No. 1 Strong unbleached	2.75	@	3.25
No. 2 Strong unbleached	2.50	@	2.75
No. 1 Kraft	2.75	@	3.00
Sulphate—			
Bleached	4.00	@	4.50

(F. o. b. Pulp Mill.)

Sulphite (Domestic)—			
Bleached	4.50	@	5.25
Strong unbl'chd	2.75	@	3.00
Easy Bleaching Sulphite	3.00	@	3.50
News Sulphite	2.75	@	3.00
Mitscherlich	3.25	@	3.75
Kraft (Domestic)	2.75	@	3.00
Soda bleached	4.00	@	4.25

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—			
New White, No. 1	10.00	@	10.50
New White, No. 2	6.00	@	6.50
Silesias, No. 1	6.00	@	6.50
New Unbleached	8.75	@	9.50
Washables	4.00	@	4.50
Fancy	4.50	@	5.00
Cottons—according to Grades—			
Blue Overall	5.75	@	6.00
New Blue	4.00	@	4.50
New Black Soft	3.50	@	4.00
New Light Seconds	2.75	@	3.00
O. D. Khaki Cuttings	3.50	@	3.75
Corduroy	2.75	@	3.00
New Canvas	6.00	@	6.50
New Black Mixed	2.75	@	3.25
Old White, No. 1—			
Repacked	5.00	@	5.50
Miscellaneous	4.00	@	4.25
White No. 2—			
Repacked	2.75	@	3.00
Miscellaneous	2.25	@	2.50
St. Soiled White	1.65	@	1.75
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.35	@	1.50
Black stockings	2.00	@	2.25
Cloth Strippings	1.05	@	1.15
No. 1	1.10	@	1.15
No. 2	.90	@	1.00
No. 3	.70	@	.80
No. 4	.70	@	.80
No. 5A	.90	@	1.00

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings		nominal
New Dark Cuttings	2.00	@ 2.25
No. 1 White Linens	8.50	@10.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.25	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints		nominal
Dutch Blue Cottons	2.10	nominal
German Blue Cottons	1.75	nominal
Ger. Blue Linens	3.00	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.10	nominal
Shoppery	.95	@ 1.00
French Blues	2.00	nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—			
Foreign	1.00	@	1.10
Domestic	1.10	@	1.20
Wool, Tares, light	1.20	@	1.30
Wool, Tares, heavy	1.25	@	1.40
Bright Bagging	1.20	@	1.30
No. 1 Scrap	.75	@	1.10
Sound Bagging	.75	@	.85
Manila Rope—			
Foreign	5.00	@	5.25
Domestic	5.25	@	5.50
New Bu Cut	2.50	@	3.00
Hessian Jute Threads—			
Foreign	4.25	@	4.50
Domestic	4.00	@	4.25
Mixed Strings	1.10	@	1.25

Twines

Cotton— (F. o. b. Mill)

No. 1	32	@	34
No. 2	30	@	32
No. 3	26	@	28
India, No. 6 basis—			
Light	17	@	18
Dark	17	@	18
B. C., 18 Basis	38	@	40
A. B. Italian, 18 Basis	50	@	60
Finished Jute—			
Light, 18 basis	25	@	26
Dark, 18 basis	26	@	28
Jute Wrapping, 3-6 Fly—			
No. 1	22	@	23
No. 2	30	@	31
Tube Rope—			
4-ply and larger	14	@	16
Fine Tube Yarn—			
5-ply and larger	18	@	20
4-ply	19	@	21
3-ply	20	@	22
Unfinished India—			
Basis	15	@	16
Paper Makers Twine			
Balls	12	@	14
Box Twine, 2-3 ply	16	@	17
Jute Rope	12	@	14
Amer. Hemp, 6	32	@	34
Sisal Hay Rope—			
No. 1 Basis	14	@	16
No. 2 Basis	12	@	14
Sisal Lath Yarn—			
No. 1	13	@	14
No. 2	10	@	12
Manila Rope	16	@	18

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard White, No. 1	3.75	@	4.00
Hard White, No. 2	3.00	@	3.25
Soft White No. 1	2.85	@	3.05
Flat Stock—			
Stitchless	1.40	@	1.50
Over Issue Mag.	1.40	@	1.50
Solid Flat Book	1.30	@	4.00
Crumpled No. 1	.95	@	1.05
Solid Book Ledger	2.00	@	2.25
Ledger Stock	1.65	@	1.75
No. 1 White News	1.75	@	1.85
New B. B. Chips	.45	@	.50
Manilas—			
New Env. Cut	2.90	@	3.15
New Cut No. 1	1.80	@	2.00
Extra No. 1, Old	1.60	@	1.70
Print	.80	@	.90
Container Board	.60	@	.70
Bogus Wrapper	.55	@	.60
Old Krafts, machine compressed Bales	1.70	@	1.80
News—			
Strictly Overissue	.65	@	.75
Strictly Folded	.50	@	.55
No. 1 Mixed Paper	.35	@	.40
Common Paper	.25	@	.30

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill.

All Rag Bond	35	@	40
No. 1 Rag Bond	30	@	35
No. 2 Rag Bond	18	@	20
Water Marked Sulphite	10	@	14
Sulphite Bond	9	@	12
Sulphite Ledger	12	@	13
Superfine Writing	19	@	25
No. 1 Fine Writing	15	@	23
No. 2 Fine Writing	13	@	21
No. 3 Fine Writing	9	@	13
No. 1 M. F. Book	6¼	@	7
No. 1 S. & S. C. Book	6¼	@	7½
Coated Book	8¼	@	10¾
Coated Label	8½	@	10½
News—Rolls, mill	3½	@	4½
News—Sheets, mill	3¾	@	4¾
No. 1 Manila	5¾	@	6¼
No. 1 Fiber	5½	@	—
No. 2 Manila	5	@	—
Butchers' Manila	4¾	@	—
No. 1 Kraft	7½	@	—
No. 2 Kraft	6½	@	—
Wood Tag Boards	5	@	—
Screenings	3	@	—
Boards, per ton—			
Plain Chip	35.00	@	40.00
Solid News	40.00	@	45.00
Manila Lined Chip	47.50	@	55.00
Container Line—			
85 Test	60.00	@	65.00
100 Test	65.00	@	70.00
Binders' Board	80.00	@	
Solid Wood Pulp	80.00	@	90.00
Straw Board	35.00	@	40.00
Filled Pulp Board	60.00	@	65.00

Old Papers

Shavings—			
No. 1 Hard White	3.00	@	3.25
No. 1 Soft Shav	2.25	@	2.50
No. 1 Mixed	.80	@	.85
No. 2 Mixed	.80	@	.85
White Envel. Cuttings	3.00	@	3.25
Ledgers and Writings	1.50	@	1.75
Solid Books	1.25	@	1.50
No. 1 Books, light	.90	@	1.00
Blanks	1.65	@	1.75
Ex. No. 1 Manila	1.90	@	2.00
Manila Envelope Cuttings	2.00	@	2.25
No. 1 Manilas	1.10	@	1.20
Folders News (over issue)	.85	@	.90
Old Newspaper	.70	@	.75
Mixed Papers	.65	@	.70
Straw Clippings	.65	@	.70
Binders Clippings	.65	@	.70
Kraft	1.75	@	2.00
New Kraft Cuts	2.00	@	2.25
Roofing Stock, f.o.b. Chicago, Net Cash—			
No. 1	27.00	@	—
No. 2	25.00	@	—
No. 3	23.00	@	—
No. 4	23.00	@	—

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10	@	.60
Ledgers	.15	@	.40
Writings—			
Superfine	.15	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.30
Fine, No. 2	.20	@	.25
Fine, No. 3	.15	@	.20
Book, M. F.	.06	@	.09
Book, S. S. & C.	.08	@	.15
Book, Coated	.08	@	.15
Coated Lithograph	.10	@	.15
Label	.08	@	.15
News	.05	@	.07
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.08	@	.08½
Manila No. 2	.07½	@	.08
No. 2 Kraft	—	@	.08½
No. 1 Kraft	—	@	.09½
Common Bogus	.02½	@	.03
Straw Board	35.00	@	45.00
News Board	32.50	@	35.00
Chip Board	27.50	@	32.00
Wood Pulp Board	90.00	@	100.00

(Carload Lots)

Binder Boards—			
Per ton	$65.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	48.00	@	50.00
Slaters	54.00	@	56.00
Best Tarred, 1-ply (per roll)	1.35	@	1.50
Best Tarred, 2-ply (per roll)	1.00	@	1.15
Best Tarred, 3-ply	1.50	@	1.65

Bagging

F. o. b. Phila.

Gunny No. 1—			
Foreign	.90	@	—
Domestic	.85	@	—
Manila Rope	4.00	@	4.50
Sisal Rope	.75	@	.80
Mixed Rope	.75	@	.80
Scrap Burlaps	1.00	@	1.25
Wool Tares, heavy	2.50	@	2.75
Mixed Strings	.75	@	.80
No. 1, New Lt. Burlap	.75	@	.80
New Burlap Cuttings	1.75	@	2.10

Old Papers

F. o. b. Phila.

Shavings—			
No. 1, Hard White	3.50	@	3.75
No. 2, Hard White	3.00	@	3.25
No. 1 Soft White	3.00	@	3.25
No. 2 Soft White	1.75	@	2.00
No. 1 Mixed	1.50	@	1.75
No. 2 Mixed	1.00	@	1.25

(Continued on page 62)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 14, 1922

SUMMARY

News Print.....933 rolls, 207 bls.
Wrapping .....405 bls.
Packing .....2,012 rolls, 250 pkgs., 2,392 bls.
Printing .....221 rolls, 20 cs.
Cigarette .....868 cs.
Wall paper.....11 cs., 6 bls., 2,254 rolls
Hangings .....13 bls., 3 cs.
Filter .....20 bls., 3 cs.
Drawing .....66 cs.
Blueprint .....2 cs., 88 rolls
Surface coated .....131 cs.
Decalcomania .....10 cs.
Crepe .....10 cs.
Tissue .....4 cs., 30 bls.
Miscellaneous paper....117 cs., 265 bls., 483 rolls.

CIGARETTE PAPER

P. J. Schmeitzer, Roma, Marseilles, 13 cs.

R. F. Downing & Co., Taormina, Genoa, 50 cs.

American Tobacco Company, Rochambeau, Havre, 54 cs.

American Tobacco Company, Ohio, Bordeaux, 400 cs.

American Tobacco Company, Paris, Havre, 118 cs.

The Surbrug Company, by same, 35 cs.

Liggett & Myers Tobacco Company, McKeesport, Havre, 198 cs.

WALL PAPER

R. F. Downing & Co., Durban Maru, Kobe, 11 cs.

A. C. Dodman, Jr., Company, Samland, Antwerp, 6 bls.

The Prager Company, by same, 2,254 rolls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Maine, London, 13 bls., 3 cs.

FILTER PAPER

A. Giese & Son, Wurttemburg, Hamburg, 20 bls.

H. Reeve Angel & Co., Binnendyk, Rotterdam, 3 cs.

DRAWING PAPER

H. Reeve Angel & Co., Binnendyk, Rotterdam, 6 cs.

Keuffel & Esser, Wurttemburg, Hamburg, 60 cs.

TRACING PAPER

Keuffel & Esser, Wurttemburg, Hamburg, 9 cs.

E. Dietzgen & Co., Minnekahda, Hamburg, 5 cs.

BLUEPRINT PAPER

Keuffel & Esser, Wurttemburg, Hamburg, 2 cs., 88 rolls.

DECALCOMANIAS

Decalcomania Products Company, Mt. Clay, Hamburg, 10 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Binnendyk, Rotterdam, 64 cs.

Defender Photo Supply Company, Samland, Antwerp, 25 cs.

Defender Photo Supply Company, G. Washington, Bremen, 42 cs.

CREPE PAPER

A. P. O'Brien, Watsness, Hamburg, 10 cs.

TISSUE PAPER

Meadows, Wye & Co., Baltic, Liverpool, 4 cs.

Baera Brothers, Florinda, Valencia, 30 bls.

PRINTING PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 8 cs.

Agar Bernsson Corporation, Wurttemburg, Hamburg, 185 rolls.

Agar Bernsson Corporation, Mt. Clay, Hamburg, 19 rolls.

Chemical National Bank, by same, 17 rolls.

P. C. Zuhlke, Binnendyk, Rotterdam, 11 cs.

Pulp & Paper Trading Company, Samland, Antwerp, 1 roll.

NEWS PRINT

Agar Bernsson Corporation, Watsness, Hamburg, 75 rolls.

M. Gottesman Company, by same, 724 rolls.

National Bank of Commerce, by same, 40 rolls, 207 bls.

Chemical National Bank, Washington, Bremen, 77 rolls.

Hudson Trading Company, Mt. Clay, Bremen, 17 rolls.

WRAPPING PAPER

Equitable Trust Company, Wurttemburg, Hamburg, 238 bls.

Chemical National Bank, Watsness, Hamburg, 167 bls.

PACKING PAPER

Republic Bag & Paper Company, Watsness, Hamburg, 2,012 rolls, 250 pkgs.

Ladenburg, Thalman & Co., by same, 2,392 bls.

PAPER

F. L. Kraemar & Co., Centennial State, London, 20 cs.

Faver, Ruhl & Co., Rochambeau, Havre, 13 cs.

De Mobile Cigar Company, Taormina, Genoa, 30 bls.

Coenca, Morrison & Co., Brookvale, Hamburg, 30 cs.

F. B. Vandegrift & Co., by same, 2 cs.

F. W. Devoe & Reynolds Company, Paris, Havre, 2 cs.

G. W. Sheldon & Co., G. Washington, Bremen, 50 cs.

Republic Bag & Paper Company, by same, 105 rolls.

H. Reeve Angel & Co., by same, 21 rolls, 90 bls.

Equitable Trust Company, by same, 145 bls., 367 rolls.

RAGS, BAGGINGS, ETC.

Castle, Gottheil & Overton, Binnendyk, Rotterdam, 605 bls. rags, 523 bls. paper stock.

Royal Manufacturing Company, by same, 39 bls. cotton waste.

Ladd Tilton Bank, D. Maru, Shanghai, 35 bls. cotton waste.

National City Bank, Wurttemburg, Hamburg, 2 bls. rags.

Central National Bank, Savings & Trust Company, by same, 154 bls. rags.

Guaranty Trust Company, by same, 45 bls. rags.

R. F. Downing & Co., Maine, London, 430 bls. rags.

Stone Brothers & Sherwin, Rochambeau, Havre, 58 bls. rags.

Guaranty Trust Company, Brookvale, Hamburg, 199 bls. rags.

A. Salomon, Inc., by same, 26 bls. rags.

M. O'Meara Company, by same, 107 bls. rags.

B. D. Kaplan & Co., Megantic, Liverpool, 95 bls. rags.

Albion Trading Company, Minnekahda, Hamburg, 16 bls. rags.

A. Salomon, Inc., Watsness, Hamburg, 70 bls. paper stock.

M. O'Meara Company, by same, 396 bls. rags.

Royal Manufacturing Company, by same, 127 bls. cotton waste.

F. P. Gaskell & Co., by same, 53 bls. rags.

Parsons & Whittemore, by same, 295 bls. rags.

Castle, Gottheil & Overton, Ohio, Bordeaux, 438 bls. rags.

Castle, Gottheil & Overton, George Washington, Bremen, 627 bls. rags.

U. S. Lines, Inc., by same, 794 bls. rags.

American Woodpulp Corp., by same, 226 bls. rags.

F. P. Gaskell & Co., by same, 164 bls. rags.

Arrowhead Mills, by same, 47 bls. rags.

Chemical National Bank, by same, 177 bls. rags.

Ladenburg Thalman & Co., by same, 379 bls. rags.

Mechanics Metals National Bank, by same, 274 bls. rags.

E. J. Keller Co., Novian, Manchester, 290 bls. bagging.

E. J. Keller Co., Gorredyk, Manchester, 557 bls. rags.

E. J. Keller Co., Minnekahda, Hamburg, 306 bls. rags.

OLD ROPE

American Woodpulp Corp., George Washington, Bremen, 54 coils.

American Woodpulp Corp., Minnekahda, Hamburg, 126 coils.

Brown Bros. & Co., Bristol City, Bristol, 266 coils.

Cleveland Akron Bag Co., by same, 145 coils.

Atlantic National Bank, Roma, Marseilles, 45 rolls, 60 bales.

R. F. Downing & Co., by same, 57 bales.

Wm. Schall & Co., by same, 78 bales.

E. J. Keller Co., Bumendyk, Rotterdam, 227 coils.

CHINA CLAY

Golding Bros. & Co., New York City, Bristol, 150 tons.

Hammill & Gillespie, by same, 100 tons.

Moore & Munger, by same, 126 tons.

C. B. Richard & Co., by same, 200 bags.

A. Salomon, Cammack, Fomey, 20 tons.

Paper Makers Chemical Co., by same, 527 tons, 15 cwt.

I. W. Higman Co., by same, 407 tons, 12 cwt.

Morey & Co., by same, 81 tons, 13 cwt.

Moore & Munger, Bristol City, Bristol, 100 casks.

Moore & Munger, by same, 200 tons.

The O'Hommel Co., by same, 10 bags.

WOOD PULP

Castle, Gottheil & Overton, Bumendyk, Rotterdam, 549 bls.

Castle, Gottheil & Overton, Watsness, Hamburg, 375 bls., 75 tons.

Brown Bros. & Co., George Washington, Bremen, 3,250 bls.

Brown Bros. & Co., Brookvale, Hamburg, 494 bls., 102 tons.

Guaranty Trust Co., Wurttemburg, Hamburg, 473 bls., 55 tons.

Bendix Paper Co., by same, 45 bls. cellulose.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 14, 1922

E. J. Keller Co., Dania, Copenhagen, 82 cs. rope, 614 bls. rags.

E. J. Keller Co., Chickasaw, Stockholm, 40 bls. rags.

E. J. Keller Co., Chickasaw, Hamburg, 1,078 bls. rags.

M. Gottesman Co., Lancastrian, Hamburg, 1,349 bls. wood pulp.

Wood Pulp Trading Co., St. Anthony, 3,250 bls. wood pulp.

GALVESTON IMPORTS

WEEK ENDING JANUARY 14, 1922

M. Gottesmann & Co., Duel, Hamburg, 680 rolls news print.

Hudson Trading Co., Afel, 335 rolls news print.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 14, 1922

M. Gottesmann & Co., New England Sundsvall, 500 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JANUARY 14, 1922

M. Gottesman & Co., Duel, Hamburg, 181 rolls news print.

NORFOLK IMPORTS

WEEK ENDING JANUARY 14, 1922

E. J. Keller Co., Benkelsdyk, Rotterdam, 360 bls. bagging.

CONSOLIDATED PAPER BAG CO.

General Offices:
125 Merrimac St., Boston, Mass

Factory.
Somerville, Mass.

Manufacturers of

PAPER BAGS and SACKS of EVERY DESCRIPTION

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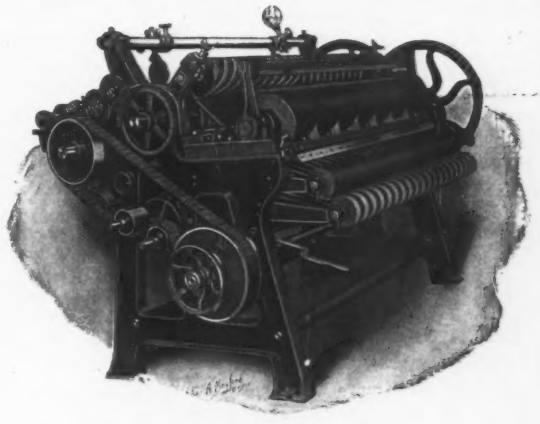
Single, Duplex and Diagonal



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Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company

PROVIDENCE, R. I.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, January 18, 1922.

ALUM.—Activity in the alum market has increased somewhat due to the expected reaction from the period of inventory taking when sales were cut to the limit. Prices are fairly firm, with ammonia alum quoted at from 3.65 to 3.75 cents a pound for the lump, 3.75 to 4.00 cents for the ground, and 4.15 to 5.25 cents for the powdered.

BLEACHING POWDER.—Orders for small lots of bleach are fairly numerous, but it is generally felt that business has yet to improve much to reach a pre-war status. Imported bleach sells at around 2.00 cents a pound and domestic at from 2.00 to 2.25 cents a pound.

BLANC FIXE.—Movement in the blanc fixe market is negligible. The feeling in the trade has improved and prospects are for more activity in the near future. Blanc fixe pulp is quoted at from $40 to $50 a ton, depending on the grade required, and powdered blanc fixe is quoted at from 3.50 to 3.75 cents a pound.

BRIMSTONE.—The sulphur market is fairly firm, with a somewhat decreased supply balancing the slack demand. Contracts for 1922 are on the books in goodly number and only betterment is looked for. Domestic brimstone is quoted at from $18 to $20 a ton, f. o. b. New York, and $16 to $18 a long ton at the mines.

CASEIN.—The casein market has stiffened appreciably and the demand is on the increase. Supplies of the commodity are subnormal and the trend is toward higher prices. Casein is now quoted at from 8.25 to 9.00 cents a pound.

CAUSTIC SODA.—Business in the caustic soda market has been light for the week, although a small improvement has been registered over the extremely dull period of inventories and general disorder attendant upon the arrival of a new year. The contract price is 3.65 cents a pound on the basis of 76 to 78 per cent.

ROSIN.—The rosin market holds firm and prices steady. Grades E, F, and G are quoted at 5.45 cents a pound.

CHINA CLAY.—Sales of china clay are on the increase and the undertone indicates more willingness to agree on prices. The domestic product unwashed sells at $6 to $8 a net ton, the washed at $8 to $10, and the imported at $15 to $20.

SALTCAKE.—The saltcake market has attained a degree of strength and more sizable lots are moving than formerly. Chrome saltcake sells at $18 to $20 a ton and acid white at $22 to $23.

STARCH.—The starch market is fairly active for this time of the year, with prices firm at $1.82 for bags and $2.10 for barrels.

SATIN WHITE.—Dealers are optimistic for the satin white market in the belief that the tonnage required for the current year will exceed that demanded for the last year by a considerable amount. Prices have a tendency to fluctuate. Satin white is quoted at 2.10 cents a pound.

SULPHATE OF ALUMINA.—The demand for sulphate of alumina is improving, but still very light. High freight rates are interfering greatly with the movement of the heavy chemicals and it will be difficult for normal markets to obtain until they are adjusted. The commercial grade of sulphate of alumina sells at from 1.60 to 1.70 cents a pound and the iron-free grade at from 2.60 to 3.00 cents.

SODA ASH.—Foreign soda ash is marketed at from 1.85 to 1.95 cents a pound and domestic at 1.90 to 2.00 cents. Demand continues slow, although the trade is not well supplied.

TALC.—The sentiment in the talc market is better and the demand stronger than for some time, although there is still plenty of room for improvement. Talc is quoted at from $10 to $12 a ton.

Market Quotations

(*Continued from page 59*)

Solid Ledger Stock.	2.00	@	2.25
Writing Paper....	1.80	@	2.00
No. 1 Books, heavy.	1.50	@	1.75
No. 2 Books, light.	1.25	@	1.50
No. 1 New Manila.	2.75	@	3.00
No. 1 Old Manila..	1.50	@	1.75
Container Manila..	1.00	@	1.10
Old Kraft	1.90	@	2.00
Overissue News....	.75	@	.80
Old Newspaper....	.50	@	.60
No. 1 Mixed Paper.	.45	@	.50
Common Paper....	.40	@	.50
Straw Board, Chip.	.40	@	.45
Binders' Bd. Chip.	.40	@	.45

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.09¼	@	.09¾
New White, No. 2	.05	@	.06
Silesias, No. 1..	.05	@	.06
New unbleached..	.08½	@	.09
Washables	.03½	@	.03¾
Fancy	.05	@	.05½
Cottons—according to grades—			
Blue Overall....	.05	@	.05½
New Blue.....	.02½	@	.02¾
New Black Soft.	.03	@	.03¼
New Light Seconds	.02¼	@	.02½
Khaki Cuttings...	.02¾	@	.03¼
Corduroy	.02	@	.02½
New Canvas.....	.07½	@	.08
New Black Mixed	3.00	@	3.25

Old

White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03	@	.03¼
Miscellaneous ...	.02¾	@	.03¼
Thirds and Blues—			
Repacked	1.85	@	2.00
Miscellaneous ...	1.55	@	1.75
Black stockings...	1.75	@	2.25
Roofing Stock—			
No. 1.....	.90	@	1.00
No. 2.....	.80	@	.90
No. 3.....	.70	@	.80
No. 4.....	.75	@	.85
No. 5A.....	nominal		
B.....	nominal		
C.....	nominal		

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.07½	@	
Ledgers	.09	@	
Writings	.08	@	
Superfine	.15	@	
Fine	.12	@	
Books, S. & S. C..	.06½	@	
Books, M. F.....	.06	@	
Books, coated	.09	@	
Label	.09½	@	
News, sheets.....$3.75		@	
News, rolls	.05½	@	
Manilas—			
No. 1 Manila....$6.75		@	
No. 1 Fibre.....	8.00	@	
No. 1 Jute.....	8.00	@	
Kraft Wrapping....	7.00	@	
Common Bogus....	3.00	@	

Boards

(Per Ton Destination)

Chip $37.50		@	—
News, Vat Lined...	39.00	@	40.00
Wood, Vat Lined..	47.50	@	50.00
Filled News Board.	40.00	@	42.50
Solid News Board..	42.50	@	45.00
S. Manila Chip...	55.00	@	
Pat. Coated.....	70.00	@	75.00

Old Papers

Shavings—			
No. 1 Hard White	.03½	@	
No. 1 Soft White	.03	@	.03¼
No. 1 Mixed....	.07½	@	$8.00
Ledgers & Writings	.02	@	.02½
Solid Books	.01¼	@	$1.35
Blanks $1.30		@	$1.40
No. 2 Books Light.	.60	@	.70
Folded News, over issues $11.50		@	12.00
Mixed paper.....	.05	@	
Gunny Bagging ...	.80	@	
Manila Rope	.05	@	
Common Paper.....	8.00	@	
Old News.....	.08	@	
Old Kraft.....	1.65	@	

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	13	@	—
Light tinted	14	@	—
Dark tinted	15½	@	—
Ledgers	14	@	—
Writing	11	@	15
News, f. o. b. Mills—			
Rolls (carloads).	4.00	@	—
Sheets (2 tons or over)	4.75	@	—
Book—			
No. 1 M. F. (carloads) 10.00		@	—
No. 2 M. F. (carloads)	9.00	@	—
No. 3 M. F. (carloads)	8.50	@	—
No. 1 S. C. (carloads) 10.50		@	—
No. 2 S. C. (carloads)	9.50	@	—
No. 1 Coated and litho. 15.00		@	—
No. 2 Coated and litho. 14.00		@	—
No. 3 Coated and litho. 13.25		@	—
Coated and litho., colored 15.25		@	—
Wrapping—			
Grey	4.75	@	—
White Wrap.....	5.25	@	—
"B" Manila.....	5.75	@	—
No. 1 Manila....	7.50	@	—
Fibre	7.25	@	—
Kraft, M. F. or M. G.	8.75	@	—

Pulp

(F. o. b. Mill)

Ground Wood $25.00		@	$30.00
Sulphite, easy bleaching	65.00	@	75.00
Sulphite, news grade..	60.00	@	65.00
Sulphite bleached....107.50		@	
Sulphate	75.00	@	

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.25	@	—
Soft White Book Shavings	3.15	@	—
White Bl'k News	1.85	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.15	@	—
Light and Crumpled Book Stock	1.00	@	—
Ledgers and Writings	1.65	@	—
Solid Ledgers ...	1.65	@	—
Manilas—			
New Manila Cut.	1.85	@	—
Printed Manilas..	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News ...	.70	@	—
No. 1 Mixed Papers	.60	@	—

Domestic Rags—
Price to mills, f.o.b. Toronto.

	Per lb.		
No. 1 White shirt cuttings	.09¼	@	.10
No. 2 White shirt cuttings	.05½	@	.05¾
Fancy shirt cuttings	.05½	@	.05¾
No. 1 Old whites	.04	@	—
Thirds and blues	.02	@	.02¼
	Per cwt.		
Black stockings.	2.00	@	—
Roofing stock			
No. 1.....	1.25	@	—
No. 2.....	1.15	@	—
Roofing stock			
Manila rope.....	.04¼	@	.05
No. 2	.01½	@	—
Gunny bagging ...	.02¾	@	—

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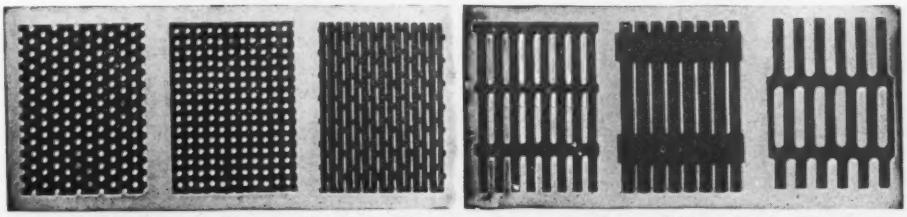

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WANT AND FOR SALE ADVERTISEMENTS

HELP WANTED

ENVELOPE MACHINE ADJUSTERS on Web, Open and Envelope Machines. Address, Box 333, Room 2503, 110 West 40th Street, New York City. J-19

PAPER SALESMEN—Experienced Salesmen, having established City Trade in Printing and Wrapping Papers, wanted by Progressive Concern, liberal salary or commission basis. Caldwell Paper Company, 244 Lafayette St., New York City. F-2

WANTED—Two first class Yankee Fourdrinier Machine Tenders on up-to-date machine. Married men preferred. Mill located Middle West. Good schools and modern city accommodations. Enclose references and state experience and where last employed. Address, Box 4695, care Paper Trade Journal. F-2

WANTED SALESMAN—Must be hustler, with successful record selling to Paper Manufacturers. One who has handled China Clay preferred. Reply, giving complete experience, age, nationality, etc. Address, Box 4750, care Paper Trade Journal. J-26

WANTED—Practical Paper Mill Color Man fully experienced in coloring High Class Special Papers. Give references and state experience. Addrss, Box 4751, care Paper Trade Journal. F-9

BAG MACHINE ADJUSTERS on F. & S. and Self Opening Bag Machine. Address, Box 334, Room 2503. 110 West 40th St. New York City. J-19

WANTED—Machine Help and Beaterman. Mill in good location. Address, Box 4753, care Paper Trade Journal. F-9

WANTED—Graduate Engineer or Draftsman for Paper Mill in Middle West. Work to be Designing and drafting. Paper Mill and Power House experience preferred. Please give age, experience and salary expected. Address, Box 4754, care Paper Trade Journal. F-9

BUYER—Young man for Purchasing Department large Corporation. Essential requirements: A Trading Mind, Executive Ability, energy, thoroughness, good morals and pleasing personality. College or Practical Training preferred. Opportunities of this position limited only by the man's capacity and ability. Give full details, past experience, references and salary desired in first letter; also enclose photograph. Address, Box 4755, care Paper Trade Journal. J-26

WANTED—Paper Bag and Envelope Salesmen. A Specialty House having recently enlarged its Manufacturing Equipment desires the services of young aggressive salesmen. A broad field and excellent future. Experience and knowledge essential. Write in detail. Address, Box 4638, care Paper Trade Journal. tf.

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An opportunity for High Class Man who calls on Paper Mill Trade to sell as side line high grade established steam appliance for Paper Machine. Increases production 5% to 15% at a reduced coal cost. Exclusive territory. Man must be well acquainted with Paper Mill Men and of high morals. Experience not necessary. Commission very attractive. Can consign territory at once. Address, Box 4752, care Paper Trade Journal. J-26

WANTED—Sales Executive and Office Manager familiar with all grades of Paper Box Boards and Colored Specialties. To locate in Boston. One acquainted with New England and New York Trade preferred. State experience and references. Address, Box 4695, care Paper Trade Journal. tf

HELP WANTED

WANTED—Experienced Paper Bag and Twine Salesman for Chicago and adjacent territory with old established Jobbing House. State in detail, age, experience and salary. Address, Box 4756, care Paper Trade Journal. J-19

WANTED: COMBINER MAN—To make lay-outs and take charge of operating one 80" and 120" machine for pasting solid fibre container board. Pressman: Must be experienced in High-class solid fibre container work to assume direct charge of Printing Department, consisting of various makes of fibre-Board Presses, both flat beds and cylinder types. General Foreman: Man who is experienced in all the finishing processes of solid Fibre Container Work. Must be able to take full charge of Slitting, Cutting, Creasing and Stitching Departments. Full particulars as to experience, references, and salary expected to be covered in first letter of application. All correspondence treated confidentially. Address, Box 4708, care Paper Trade Journal. tf

WANTED—High Grade Paper Salesman can have exceptional opportunity with Young Aggressive House in New York City. Established trade and Sales Ability essential. Communications confidential. Address, Box 4674, care Paper Trade Journal. J-19

WANTED

Wood Pulp Salesmen, experienced and with record for actual accomplishments, wanted by large Wood Pulp Import Firm. Replies giving full details will be kept in strict confidence. Address, Box 4720, care Paper Trade Journal. tf

SALESMAN—To take care of the State of Connecticut, making his Headquarters in Hartford. Apply in writing only. Continental Paper and Bag Mills, Dominick and Clarke Streets, New York City. tf

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SUPERINTENDENT WISHES TO make a change from his present position. Have had fifteen years' experience on all grades of Boxboards, Containers, Tests, etc. Familiar with repairs, maintenance, and know how to handle men. Middle aged, married, and can give best of references. Address, Box 4435, care Paper Trade Journal. J-19

WHO WANTS A LIVE COATING MILL SUPERINTENDENT—Now employed. 20 years' experience on Book, Lithograph, Glazed and Flint Papers. Nothing but a live proposition will be considered. Address, Box 4712, care Paper Trade Journal. J-19

POSITION WANTED—Can fill any position connected with the Felt Paper Business. Address, Perry Kingston, 21 Alexander St., Little Falls, N. Y. J-19

SITUATION WANTED by Superintendent of Ability; 20 years practical experience as Manager and Superintendent on all Grades of Board from Straw Board to White Rag Bristols. Expert on Beater Colors and Calender Stained Boards. Test Board and all grades of combination Boards and High Grade Boards for Coating. Wide experience on Mill Constructions and Repairs, also in managing Help to get greatest efficiency. Can furnish high class references as to character and ability. Would consider posion as operating Manager or Superintendent of Good Combination Board Mill. Address, Box 4722, care Paper Trade Journal. J-26

SITUATIONS WANTED

SITUATION WANTED—Young man (27), who has had five years' engineering experience in Pulp and Paper Mills and with Paper Mill Engineers in the United States and Canada would like to locate with a Paper Mill machinery concern on their sales force. Address, Box 4748, care Paper Trade Journal. J19

WANTED—By young man of exceptional ability, position as Assistant Manager or Superintendent. Fifteen years' experience in the manufacture of News, Hanging, Kraft, and all Sulphite Papers. Understands Mill Construction and General Repairs. Can arrange help to obtain highest efficiency. Also furnish best of references as to ability and character. Address, Box 4759, care Paper Trade Journal. J-26

SCANDINAVIAN PAPER MAN—Fully familiar with the American Paper Trade, desires position. Is willing to go to Europe to make direct connection with the Scandinavian or German Mills. Wide experience and can furnish best references. Address, Box 4739, care Paper Trade Journal. J-19

A NEW YORK CITY PAPER SELLING ORGANIZATION with ample capital to finance a large volume of business would like mill connections for Book, Coated and Bond and other Papers. Correspondence strictly confidential. Address, Box 4747, care Paper Trade Journal. tf

SUPERINTENDENT—At present running high grade Writing Mill, would like to connect with a high grade Book Mill, as assistant to the Manager. Have had Cost and Statistical experience. Twenty-five years old and married. Address, Box 4757, care Paper Trade Journal. J-26

UNIVERSITY GRADUATE with real practical mill experience wishes position. Proven ability as assistant to executive. Will do anything. Best references. Address, Box 4758, care Paper Trade Journal. J-26

SUPERINTENDENT—Open for position; 20 years experience. Practical paper maker on Bonds, Writings, Ledgers, Waxing and book. Will go to Canada or any Foreign Country. Address, Box 4737, care Paper Trade Journal. M-2

SUPERINTENDENT—Middle-aged, desires position in either book-test boards or kraft mill. Twenty years' experience. Knows Quality and Production. Good references. Address, Box 4731, care Paper Trade Journal. J-26

PAPER OR PAPER BAGS—Young aggressive Toilet Paper Salesman covering New York, New Jersey, Pennsylvania, Virginia, Maryland States and Washington, D. C., desires an additional line of either Wrapping Papers or Paper Bags, that would interest large Wholesale Paper dealers. Address, Box 4735, care Paper Trade Journal. J-26

SULPHITE SUPERINTENDENT, 20 years' practical and some technical training, wishes to get in touch with managers of mills who want the best and are not getting it. Address, Box 4744, care Paper Trade Journal. F-24

EXECUTIVE AVAILABLE—Experienced managing sales of parchment and waxed paper mill; 28; married; energetic and reliable. Quickly adaptable to new conditions. Now employed. Desires change. Address, Box 4745, care Paper Trade Journal. J-26

SEVENTEEN YEARS' PAPER experience, particularly printers' Papers, in Sales Department, Traveling Salesman, Export Department Manager, desires connection in New York as Executive or Salesman with Mill or well known jobbers where experience and consistent effort are appreciated. Now employed; 35 years of age; married; steady; good record; best references. Address, Box 4702, care Paper Trade Journal. J-26

SITUATION WANTED—Machine Designer and Draughtsman of long, varied experience, unusual ability at solving new and complex problems. Open for engagement on time basis or contract. Address, Graphic, 946 Gates Avenue. Brooklyn, N. Y. J-19

SITUATIONS WANTED

YOUNG MAN—College education with Mill and Jobbing experience in Fine Paper Trade wants selling connection with jobbing House, Mill Agency or Sales Representative in Middle West. Address, Box 4711, care Paper Trade Journal. J-19

SALESMAN—For several years has been buying and selling paper for export. Full charge of export department. Travels considerably Latin America and Europe for present concern. Wants position with paper house or mill, either export or domestic fields. Would consider salary proposition or drawing account and commission. Address, Box 4749, care Paper Trade Journal. J-19

A-1 ALL AROUND MECHANIC—Wishes to make change. Twenty years' experience in Pulp and Paper Mills. Satisfactory work guaranteed. Employers interest is mine. References. Address, Box 4760, care Paper Trade Journal. F-2

BOSS FINISHER—Open for engagement in coating mill. Experienced on Book, Litho, Glazed, Embossed Paper and all Specialties. Address, Box 4761, care Paper Trade Journal. F-2

BOSS MACHINE TENDER desires change. Eight years' experience large and fast Machines, all grades, News, Book, Kraft, Specialties. Married. Best references. Can produce the goods. If your mill needs new blood answer this advertisement. Address, Box 4762, care Paper Trade Journal. F-9

SUPERINTENDENT—Open for position, experienced on high grade Stock, Tissues, Silver Tissue, Cigarette, carbon, stereotype, typewriter, copying, Pattern, Wrapping and colored specialties. Can get production. Address, Box 4763, care Paper Trade Journal. F-2

SITUATION WANTED—Mechanical Engineer who has had four years' engineering experience in Sulphite Mill, would like position with Paper and Pulp Importer or Mill. Moderate salary. Address, Box 4764, care Paper Trade Journal. J-19

SITUATION WANTED—Whether or not your peeled Pulp Wood figures $15.00 or $30.00 a cord F. O. B. your mill is going to be a big cost item the next few years. A resident of Maine, 44 years old, with a wide business experience, is qualified to handle the entire Wood Supply for a mill on an economical basis, and knows several sources of supply. From personal experience has developed an economical cost system in the woods that is in the hands of the bosses once a week showing the cost of previous week's work. This system based on the fact that costs are kept to reduce expenses. Salary must be at least $5,000.00 a year with a percentage of the indicated savings in landing wood at the mill. Address, Box 4736, care Paper Trade Journal. F-2

MISCELLANEOUS

WANTED

MILL AGENT WITH ESTABLISHED SELLING ORGANIZATION WILL CONSIDER MAKING AN INVESTMENT IN A GOING TISSUE MILL HAVING TOILET PAPER PLANT. BEST REFERENCES; CORRESPONDENCE CONFIDENTIAL. ADDRESS, BOX 4742, CARE PAPER TRADE JOURNAL. J-19

MISCELLANEOUS

PRINTING PRESS RUNS WANTED—We are in position to give interesting prices on long press runs by throwing these runs to our night shift. Also in position to purchase Super at Mill Prices if required. Mail your proposition for an estimate. Glens Falls Publishing Co., Glens Falls, N. Y. New York Office, Room 412, Times Building, N. Y. J-19

WANTED—A second hand Paper Machine, 120 inches wide, either fourdrinier or cylinder. Complete from Screens to Winder, and capable or running out 15 to 20 tons or Wrappings. Address, Box 4741, care Paper Trade Journal. J-19

WANTED—Kollergang Bed Stone 84" diameter or smaller, state make and price and send cut or print if possible. Cushnoc Paper Co., Augusta, Maine. J-19

WANTED—A 7 or 9 Roll Super Calender from 34 inches to 40 inches in width. George La Monte & Son, 61 Broadway, New York. tf.

WANTED—One Slitting and Rewinding machine, second hand or rebuilt, must be in first class condition and do satistory work on Wrapping Paper of all kinds. Irwin Paper Co., Quincy, Illinois. J-19

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Mar.-15

SIMMON'S, JOHN, SONS, Paper and Paper Stock, 28 and 30 South Marshall street, Philadelphia, Pa. Mar.-1

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods, Bordentown, N. J. 1—1—24

WILSON, H. P. & H. F., Manufacturers of Steel Wire Bale Ties, for baling all compressible material. 544 West 22nd street, New York City. Jan.-25

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FOR SALE—Roofing and Saturating Machines, 72"x36" wide. Chilled steel rolls. Also Painter Mixing Machine, Grinders, etc. Address Box 4310, care Paper Trade Journal tf

FOR SALE—Four—Fifty-Six Inch, Two—Forty-eight inch and one Four-six inch second hand Trump Water Turbines that we have replaced with larger units. May be inspected at any time. French Paper Co., Niles, Michigan.

FOR SALE—14 Calender Rolls, 58" face, 8" to 14" diameter. 2 No. 1 Claflin Engines. 1 small Jordan Engine. 1 6" Horizontal Water Pump. 2 Air Fans. Complete triple-deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf.

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BOX BOARD MILL FOR SALE—This mill is new, 50 Tons production per day. Located in central part of New York State. Can be bought right. Address, Box 4714, care Paper Trade Journal. tf

FOR SALE: DRYERS—8-60"x120" Dryers with bearings. A bargain. W. V. Sullivan, Call Bldg., San Francisco. tf

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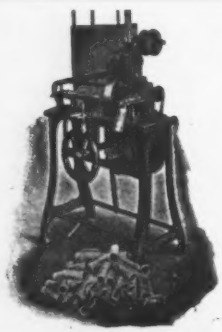

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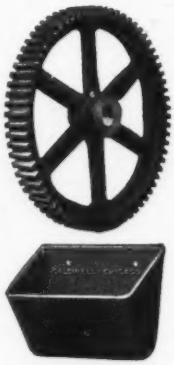

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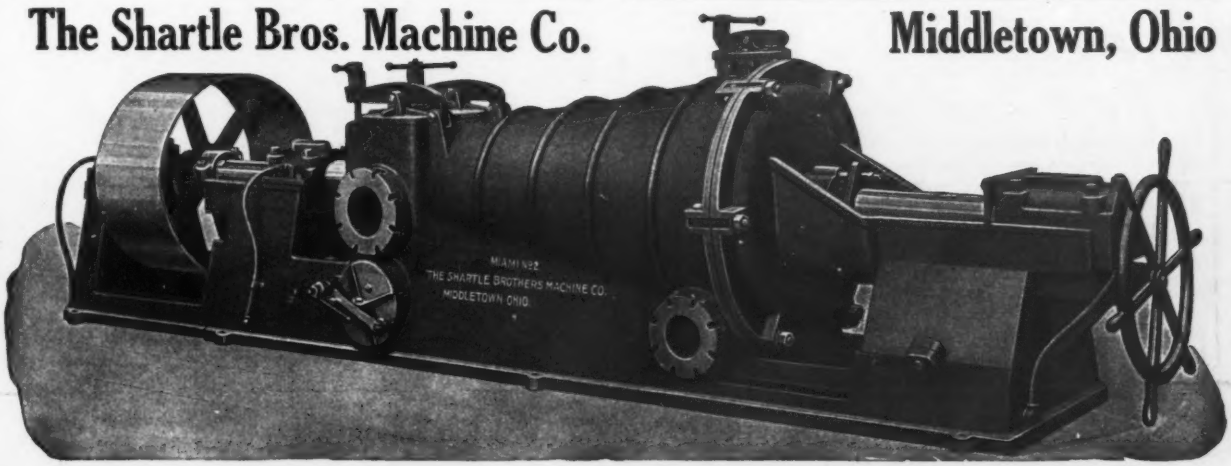

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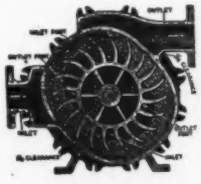

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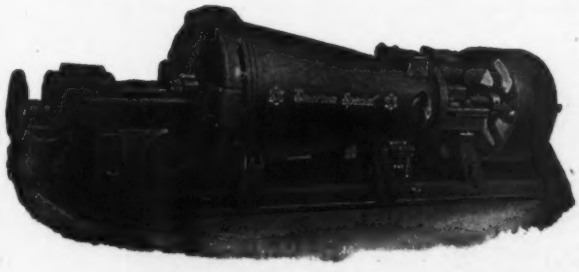

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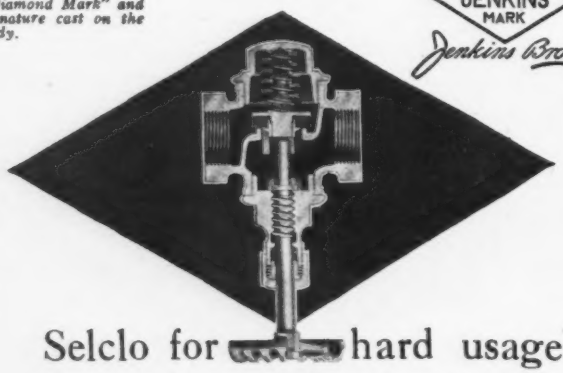

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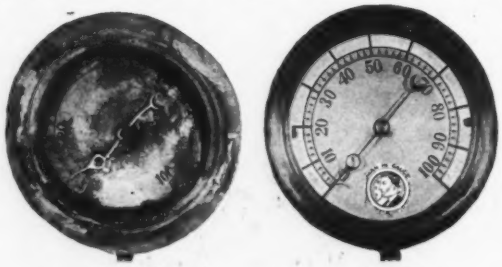

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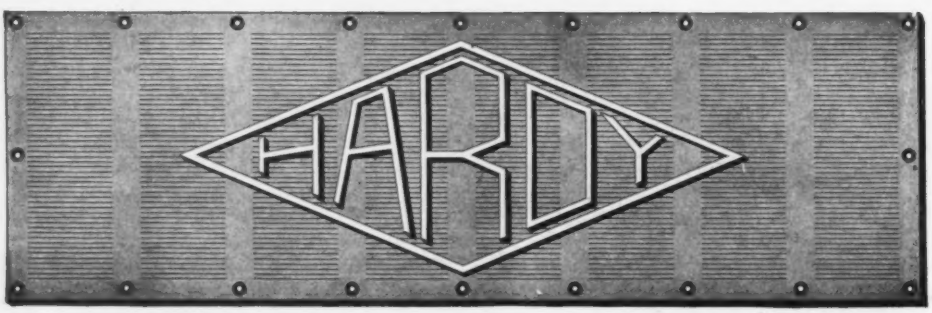

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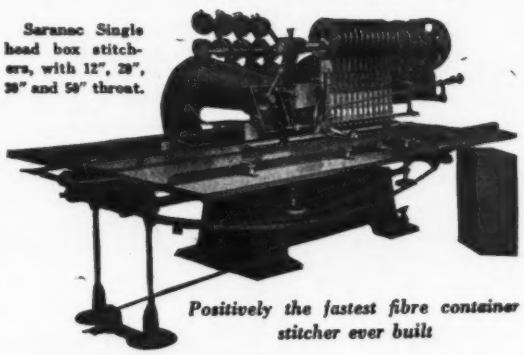

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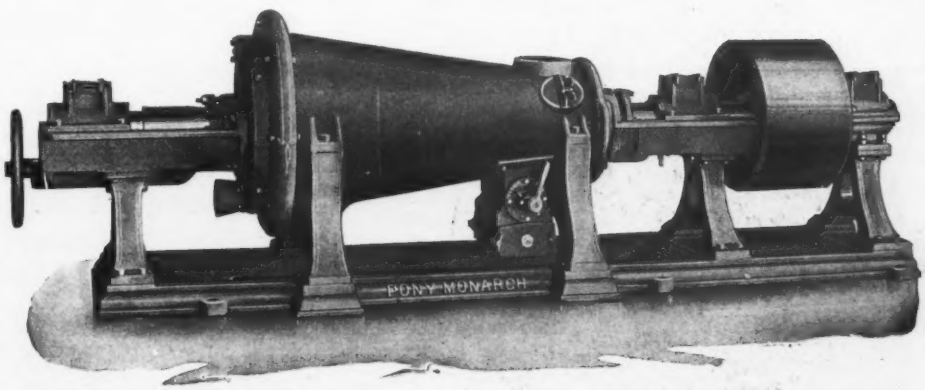

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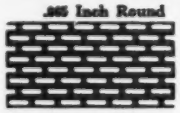

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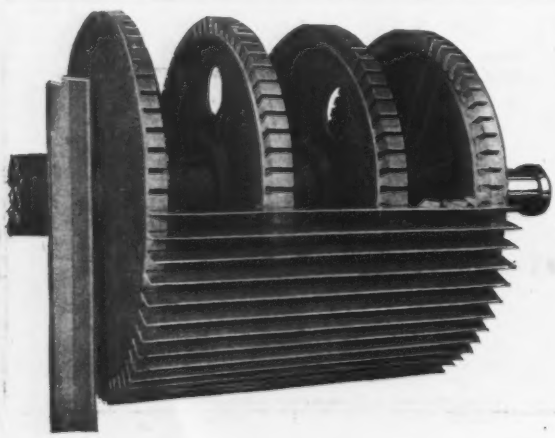

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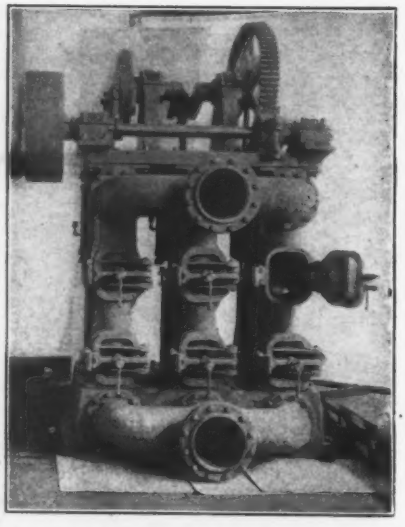

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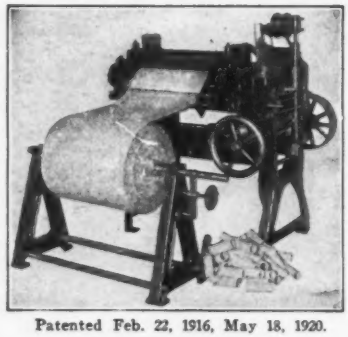

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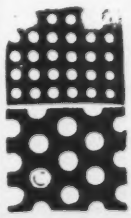

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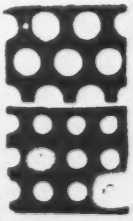

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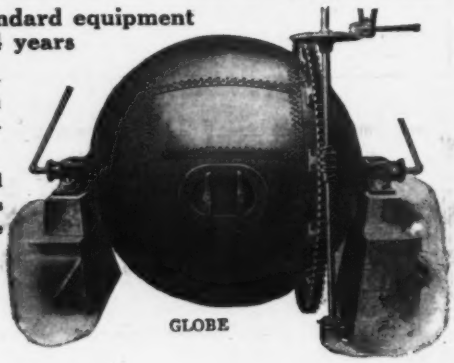

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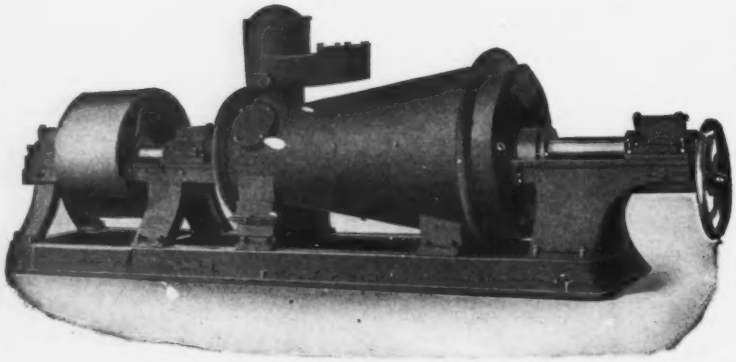

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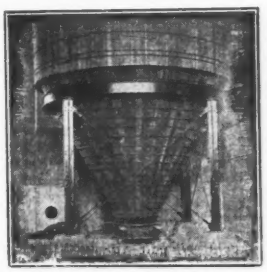

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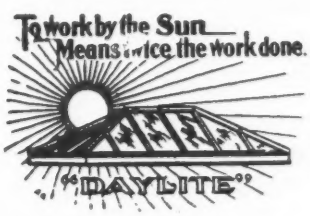

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